HUMAN INSTINCTS, EVERYDAY LIFE, AND THE BRAIN

A paradigm for understanding behavior

Volume Eight

Using Orientations – Part One

Photographs

Applying orientations
Rectangles
Repetition

Numbered examples: #7016 – #7180

A research series by Richard H. Wills

HUMAN INSTINCTS, EVERYDAY LIFE, AND THE BRAIN

HUMAN INSTINCTS, EVERYDAY LIFE, AND THE BRAIN

A paradigm for understanding behavior

Volume Eight

Using Orientations – Part One

Photographs

Applying orientations
Rectangles
Repetition

Numbered examples: #7016 – #7180

A research series by Richard H. Wills

© 2016 by Richard H. Wills

All rights reserved. No part of this book may be reproduced, stored, or transmitted in any form or by any means - graphic, electronic, or mechanical, including photocopying, recording, taping, or by any information system or retrieval system - except for brief extracts quoted in a review, without written permission by the author.

ISBN: 978-0-9684020-7-8

Printed in the United States

Distributed by

The Book Emporium
Charlottetown
Prince Edward Island
Canada

e-mail: bookspei@gmail.com

CONTENTS

1. Introduction to this series 1

2. Implications of this research 13

3. Using orientations 47

Photographs are at the back of this volume

Acknowledgements 213
Index of numbered examples 217
Subject index 229
Sources of photographs in this volume 231
Photographs 233

1. INTRODUCTION TO THIS SERIES

Volume One

Volume One in this series contains a theoretical introduction; a list of implications; photographs; five chapters on specific behaviors in response to instincts, or feelings; and a discussion of a) the study of behavior, and b) human perception of nonhumans. The five chapters on specific behaviors deal with seeking positive reactions; avoiding embarrassment, criticism, and rejection; and not hurting others. A short summary of Volume One is provided in the next few paragraphs.

Feelings act as instincts in humans and other species. Feelings are designed to help us obtain and protect resources. Feelings are a more reliable means of directing our behavior than are learning, memory, culture, and conscious thought. Instead, we use learning, memory, culture, and conscious thought as means to satisfy our feelings. We seek positive feelings and avoid negative feelings. Positive feelings occur in the form of pleasure, which is provided by a variety of sources, including positive reactions from others, pleasant stimulation, the achievement of goals, and sex. Negative feelings include loneliness; anxiety; envy; anger; and hurt from criticism, rejection, embarrassment, and self-criticism. Feelings involve an increase of tension or a release of tension. Tension and the increase of tension are experienced as hurt, and the release of tension is experienced as pleasure. People engage in specific behaviors in response to positive and negative feelings. The five behaviors which are dealt with in Volume One are seeking positive reactions, avoiding embarrassment, avoiding criticism, avoiding those who reject us, and trying to help others. Each of these is considered in turn below.

People want positive reactions from others, and try to get them in a multitude of ways. People seek positive reactions in order to avoid loneliness and to experience pleasure. When people receive the kinds of positive reactions they want from the individuals they want them from,

they feel pleasure and they cease to feel lonely. People establish relationships in order to obtain a steady supply of positive reactions. Those who provide a person with positive reactions usually provide the person with resources. Resources include food, shelter, protection, help, money, stimulation, and sex. Those who do not provide a person with positive reactions usually do not provide the person with resources. Therefore, the ability to get positive reactions from a person serves as an early indicator that one is likely to get resources from the person. People provide others with positive reactions and resources in order to get both positive reactions and resources from them. When people experience pleasure they smile and laugh. Smiling and laughing are desired positive reactions, and people do things for others in order to receive smiles and laughs.

People are embarrassed when others know they have done something that is disapproved of. Embarrassment is a punishing experience because it hurts. People try to avoid embarrassment in order to avoid hurt. In order to avoid embarrassment, people a) avoid doing the things that others disapprove of, and b) try to keep others from finding out what they do that others disapprove of. When a person is disapproved of, others are less willing to give the person resources. Embarrassment acts as an early warning system. It notifies us that we are in a situation which is likely to cause others to cut off our resources. When we avoid embarrassment we avoid alienating others and losing resources.

People try to avoid criticism from others. Criticism hurts, and people avoid criticism in order to avoid hurt. When a person is criticized, other people are already reducing that person's resources or making plans to do so. Therefore the more sensitive a person is to criticism and the possibility of receiving it, the more the person tries to avoid criticism, and the better the person protects his or her resources.

People reject others because their own resources are limited. If they give their resources to everyone who wants them, they will not have them available for themselves and those they want to give them to. People usually do not experience hurt when they reject others. However, those who are rejected do experience hurt. Because of this hurt, people normally avoid those who reject them. This enables them to stop wasting time and energy continuing to try to get resources from those who are unlikely to provide them. Instead, people seek resources from those

who do not reject them and are much more likely to provide them with resources.

When people hurt others, cause them to lose resources, or fail to help them, they often criticize themselves. Self-criticism, or guilt, is a punishing feeling. It hurts. Therefore people try to avoid hurting others in order to avoid feeling hurt themselves. People spend most of their time with a small number of people and receive most of their resources from them. It is very much in their interest that they do not damage these people or alienate them. When they take good care of their human resources they are likely to continue receiving resources from them. It is an expensive process to try to establish relationships with new people in order to receive the same resources that one was already receiving. When people feel hurt, they cry, cry out, or want to do so. When they cry they notify others that they are being hurt and need help. When they cry they are more likely to cause those who are hurting them, or who could help them, to feel guilty. Therefore crying helps people protect themselves from being hurt and enables them to get help.

Volume Two

Volume Two contains chapters on five other specific behaviors in response to instincts, or feelings. It includes photographs. The behaviors which are dealt with are conserving time and energy, protecting self and resources, removing physical discomfort, taking precautions, and trying to get what others have. Each of these behaviors is discussed below.

People seek to conserve time and energy. They try to expend a minimum amount of time and energy in their physical and mental activities. The feeling which encourages them to do so is hurt. People employ tension in order to exert themselves (to act), and they experience tension as hurt. Therefore, people feel hurt when they exert themselves, and they try to avoid this feeling by exerting themselves as

little as possible. This hurt is intensified by fatigue. People engage in activity because the hurt or pleasure they experience from other feelings overrides the hurt they feel from exertion. When people do exert themselves, they try to spend as little time as possible in an activity, because they feel hurt from exertion and they feel anxious about all the other things they have to do. As a result of hurt and anxiety, people employ numerous tactics to conserve time and energy. People experience hurt and anxiety when they first consider effort. This provides them with the maximum amount of time in which to conserve time and energy.

People normally go to considerable effort to protect themselves and their resources when they are actually threatened. They seek to protect themselves from attack and mistreatment, and they attempt to protect their resources from being taken by others. The resources they try to protect include food and water, time and energy, property, possessions, jobs, money, reputation, sex, positive reactions, relationships, positive stimulation, and self-image. People view their resources as an extension of themselves. Therefore, when people protect their resources, they protect themselves. The feeling which encourages people to protect themselves and their resources is anger. Anger enables people to act aggressively. It helps them challenge and drive away others. As a result, anger often enables people to protect themselves and maintain access to their resources. People feel anger as soon as they realize others are trying to attack them or take their resources. This often allows them to respond quickly enough to protect themselves and their resources. Signs of anger enable a person to communicate the message, "Don't mess with me, because I can get violent," to others. Anger is an activator. Anger frequently produces fear in those it is directed against that they may be hurt, and it often causes them to retreat. Another feeling, anxiety, also helps people protect themselves and their resources. People feel anxiety when they think they might be harmed or lose resources, whereas they feel anger when they are in the process of being harmed or losing resources or just after it has happened. Anxiety helps people avoid future threats, whereas anger helps people protect themselves and their resources from present threats. (Anxiety is considered in Volume Two in the chapter on Taking Precautions.)

People experience a variety of physical discomforts at different times. These include hunger, thirst, hot, cold, itching, soreness, aches, pain, and fatigue. They also feel irritation as a result of a clogged nostril

or ear, a particle between their teeth, something in their eye, or an object which abrades or pushes into their skin. In addition, they feel discomfort when they need to breathe, urinate, or defecate. People feel bothered by physical discomforts and they seek to remove discomforts as they experience them. By removing physical discomforts, people prevent damage to their bodies.

People are very much concerned with taking precautions. They take precautions to protect themselves and their resources. People take countless precautions to better ensure that they get food, water, and shelter; conserve time and energy; protect themselves from various dangers; avoid accidents; obtain positive stimulation; protect possessions; avoid negative reactions from others; and keep their sources of positive reactions. People take precautions by avoiding threats, removing threats, and reducing threats. The feeling that drives people to take precautions is anxiety. Anxiety involves an increase in tension. It is a punishing feeling which often dominates a person's consciousness. People experience numerous anxieties, or worries, about threats to themselves and their resources. People take precautions in order to reduce anxiety and to prevent anxiety from occurring. As a result of anxiety and taking precautions, people better protect their bodies and their resources. A great many precautions are instituted by groups and societies to better protect their members and their interests. People experience anxiety as soon as they become aware of a potential threat. This provides them with a maximum amount of time in which to take precautions.

People frequently try to get what others have. This may be positive reactions, possessions, advantages, experiences, relationships, accomplishments, and anything else that others have but they do not. The feeling which motivates people to try to get what others have is envy. Envy motivates people to focus on resources which others have that they do not, and to endeavor to acquire these resources for themselves. They may try to take a resource from the person who has it, get the person to share the resource with them, get those who distribute the resource to give them a share, or find another way to obtain the same resource, such as buying it or making it. The feeling of envy notifies people that someone has succeeded in getting a resource that they would like to have too. Envy encourages people to obtain the same resources that others have and encourages them to exploit the resources that are available.

Volume Three

Volume Three deals with an additional specific behavior which occurs in response to instincts, or feelings. This behavior is seeking sex.

People engage in sex in order to experience pleasure. As a result of engaging in sex, people tend to procreate and maintain proximity to those they mate with. When they maintain proximity, they are likely to provide their mate and offspring with resources and receive resources from them. People seek to establish a relationship with a sexual partner in order to obtain a regular supply of resources for themselves and their offspring. These resources include food, shelter, money, help, and protection, as well as sex.

This volume examines numerous efforts that people make to obtain sex and relationships. People employ a variety of models to help them obtain sexual experiences and establish relationships. Two dominant cultural models are examined. These are *A female should not appear promiscuous* and *A male should not appear effeminate*.

Volume Four

Volume Four deals with using models. It includes photographs and five exercises for the reader.

We use models in everything we do. Models structure physical and mental behavior. They enable us to act in a purposive way. Models are the vehicles people use to satisfy their feelings. Models allow us to recognize phenomena, form explanations and objectives, and specify what to do and establish priorities. People use models when they recognize phenomena, observe what is happening, develop explanations, make plans, choose between alternatives, conduct activities, communicate to others, talk to themselves, read, hold attitudes and beliefs,

and recognize and satisfy feelings. There are an infinite number of models, and new ones are constantly being developed. Without models, behavior is random. Models are based on mental images. With a language, sounds and words are associated with our mental images.

We employ one model at a time. When we employ models, we consider alternatives; select one of the alternatives; seek to employ it; recognize obstacles, difficulties, and problems; deal with these obstacles, difficulties, and problems; and monitor our progress. People have a single-focus mind and can only focus on one model at a time. When people focus on one model, they do not recognize other models.

A primary task of consciousness is to recognize, select, and apply models. People are consciously aware of one model at a time. The previous model must be discarded or dissolved in order to formulate and focus on a new model within consciousness. The primary role of consciousness is adding, dropping, and rearranging specific behaviors. Consciousness enables us to consider and decide which behaviors to add, drop, or rearrange.

Other species require models for the same reasons that humans require them. Models enable animals to structure behavior. Models make it possible to recognize specific phenomena, interpret events, make plans, choose between alternatives, set objectives, achieve goals, recognize problems, solve problems, communicate to others, recognize feelings, and satisfy feelings. Models are based on mental images of sensory experiences. Therefore it is not necessary to employ language when one uses models. If the use of models required words and language, then a species without words and language would be incapable of recognizing specific phenomena, interpreting events, making plans, choosing between alternatives, setting objectives, achieving goals, recognizing problems, solving problems, communicating with others, recognizing feelings, and satisfying feelings. However, other species operate as quickly and efficiently as humans do.

Without models behavior would be random. Animals would wander about willy-nilly without purpose. Clearly this is not what happens. When one observes an animal one sees it engage in purposive behavior. One may see the animal travel directly from one point to another, hunt for food, hide or run to escape a predator, carry food home, eat or drink, build a home, seek a mate, get food for its young, protect its young from

predators, and train its young to survive. These are intentional activities, not random ones.

Animals live in a complex, uncertain world, and must constantly make decisions to try to obtain and protect resources and to avoid threats. Consciousness is an animal's decision-making apparatus. Any species that makes decisions has consciousness. Animals require consciousness for the same reasons humans require consciousness. Consciousness enables various species to decide to add, remove, and rearrange behaviors. As a result they intentionally change their behavior. Also, consciousness operates as a focusing mechanism. It enables the members of a species to hold a subject in their minds and to consider other factors relative to it. Consciousness permits the members of different animal species to focus on, identify, consider, and understand specific phenomena; to focus on a feeling, identify it, and deal with it; to focus on an objective and keep it in mind while they pursue it; to identify submodels and keep them in mind as they use them; to focus on and identify obstacles, difficulties, and problems and decide how to deal with them; to focus on and consider alternative models and submodels and decide which ones to use; to focus on, identify, and alter priorities; and to focus on and monitor what they are doing and how successful they are. Without consciousness members of animal species would be unable to conduct these activities.

Volume Five

Volume Five deals with establishing consistency with one's models. It includes photographs. Establishing consistency is the process by which people act. People act by changing reality – their environment, other people, and themselves – to be consistent with their personal models. When people encounter inconsistency between reality and their personal models, they experience tension. People act in order to remove this tension. They act by changing reality to be consistent with their personal models. Thus they change their environment, other people,

and themselves to correspond to their models. Establishing consistency is also the process by which people select, reject, and switch models. People select models which are consistent with their other models. They reject models which are inconsistent with their other models. People switch models by adopting those models that are more consistent with their other models, and by dropping those that are less consistent.

Consistency and inconsistency are enormously important to humans. People work very hard to establish consistency in everything they do, and when they encounter inconsistency they try to get rid of it. People seek consistency between their models and their world. Models enable people to structure their reality, act, and satisfy their feelings. People are very sensitive to inconsistency with their models. Whenever people encounter inconsistency with their models, they feel tension, or bothered. Because they feel bothered, they seek to establish consistency with their models so they will no longer feel bothered. As a consequence they constantly apply pressure on the world, other people, and themselves to conform to their models. Even though people frequently change their personal models, they believe the personal models they presently hold are best for the world around them, for other people, and for themselves.

Establishing consistency carries certain advantages. It is the mechanism that enables people to a) act in a purposive (non-random) way, b) achieve goals, and c) obtain resources. It is the mechanism by which people select, reject, and switch models. In addition, establishing consistency simplifies the individual's world, remakes the world in the individual's image, provides the brain with less work to do, permits greater communication between people, and facilitates cooperation between individuals. Establishing consistency enables people to operate more effectively and efficiently, satisfy their feelings with greater ease, and obtain more resources.

People feel bothered immediately upon encountering phenomena which are inconsistent with their models. This is advantageous, because the sooner people establish consistency, the sooner they can satisfy their feelings, and the sooner they can obtain and conserve resources.

At the same time the need for consistency is perhaps the major source of conflict between people. Individuals have numerous personal models which differ from the personal models of others. People are

bothered when they see others use models which they would not use in the same situation. People respond by trying to get others to change their models to coincide with their own. However, others seldom want to change the models that they think they have good reasons for, that they are comfortable using (familiar with), and that they employ as part of routines. Conflict occurs when people pressure others to change their models and when people resist pressure from others to change their own models.

Volume Six

Volume Six (Part 1) and Volume Seven (Part 2) examine various aspects of behavior in a single region, Prince Edward Island in Canada. This behavior is discussed in detail and then subsequently analyzed in terms of the feelings and models employed in everyday life. Volume Six focuses on behavior associated with work and social interaction. Volume Seven, the subsequent volume, focuses on behavior associated with family, religion, alcohol use, politics, community, activities, concepts, superstitions, and beliefs. Both volumes include photographs.

Volume Seven

Volume Seven (Part 2) together with Volume Six (Part 1) examine various aspects of behavior in a single region, Prince Edward Island in Canada. This behavior is discussed in detail and then subsequently analyzed in terms of the feelings and models employed in everyday life. Volume Seven focuses on behavior associated with family,

religion, alcohol use, politics, community, activities, concepts, superstitions, and beliefs. Volume Six, the previous volume, focuses on behavior associated with work and social interaction.

Volume Eight

Volume Eight, this volume, deals with human orientations. Orientations are preferences for certain designs and arrangements of objects. Human orientations include the use of straight lines, rectangles, circles, symmetry, repetition, centering, equidistance, consistency, solid colors, simplicity, perfection, thoroughness, horizontal and vertical, parallel and perpendicular, uniform edges and surfaces, and grouping on the basis of similarity. These orientations are applied by humans in all human cultures and in all historical periods. Orientations enable the brain to reduce its work. In an oriented environment phenomena are easier to categorize and there are fewer categories to deal with. The brain encourages the body to exert itself in order to establish and maintain an oriented environment in which the brain has less work to do. People experience tension in environments which are not oriented and they release this tension when they orient their environments.

Numerous examples and quotes are given in the volumes in this series, including this volume. These examples and quotes were gathered from people on Prince Edward Island. A small percentage of the material deals with experiences that people on Prince Edward Island have had in other Canadian provinces and in other countries. The person quoted is not identified by age and occupation, because in most cases the person would not want this information known. Given the small size of the province, the amount of information that people know about each other, and the effort they put into learning more about others, facts such as age and occupation would confirm the identity of many of those quoted. Unimportant details in the quotes and examples are sometimes changed to protect the identities of the subjects.

Consecutive numbered examples and quotes are provided in the volumes in this series. They are located as follows:

Volume	Numbered examples
One	#1 - #1155
Two	#1156 - #2272
Three	#2273 - #2890
Four	#2891 - #3589
Five	#3590 - #5132
Six	#5133 - #5697
Seven	#5698 - #7015
Eight	#7016 - #7180

An index of examples, quotes, and sections of text is provided at the end of each volume.

2. IMPLICATIONS OF THIS RESEARCH

Contents

Introduction	15
Feelings as instincts	15
Individuals	18
Communication of feelings	19
Activators	21
Behavior	22
Association and extension	22
Tense and release	24
Effort	25
Models and behavior	26
Language	28
Culture	31
Categories and models	33
Orientations	35

continued on the next page

The mind 38

Consciousness 40

The study of brain and behavior 42

Humans and other species 44

Humans and the environment 46

Introduction

This is a partial list of ideas, or models, which have been produced by the research to date. These ideas result from the research reported in Volume One through Volume Eight and from the research which is currently in progress which has not yet been published. This is a working list which will change as the research proceeds. There will be alterations, deletions, and additions to this list.

Feelings as instincts

1. Humans have biologically programmed feelings.

2. These feelings are present in all members of the species.

3. Feelings act as instincts.

4. Most instincts in humans and other animal species are experienced as feelings.

5. Responses to feelings in nonhuman animal species have been interpreted as instincts.

6. Feelings explain most of the behavior in humans and other animal species.

7. Feelings provide the motivational system of a species with voluntary movement.

8. Evidence that a species responds to any feeling, such as discomfort (hunger, thirst) or anxiety (running from threats, hiding from threats), indicates that the species responds to other feelings too.

9. Our behavior is directed by feelings, rather than by reason and learning. Reason and learning are used to help us satisfy our feelings. They serve as handmaidens of feelings.

10. Feelings encourage the individual to get and keep resources. Discomfort encourages us to find resources, such as food, water, and shelter, which will remove specific discomforts. Loneliness encourages us to establish relationships with friends and mates, who help us get resources, share their resources with us, and help protect us. Envy encourages us to get the same resources that others are getting. Anxiety helps us avoid threats to ourselves and our resources. Anger helps us defend ourselves and our resources. Guilt encourages us to take care of our human resources. The hurt produced by criticism, rejection, and embarrassment encourages us to avoid doing things which alienate other people, who provide us with most of our resources.

11. Feelings are activated at the first signs that resources are available or threatened.

12. Individuals act in response to feelings, or they act in advance of feelings to avoid or promote the feelings.

13. The three major types of feelings are the pleasures, the hurts, and the bothers.

14. The individual pursues pleasures while avoiding hurts and bothers.

15. Our lives are dedicated to trying to obtain pleasant feelings and avoid unpleasant feelings. Pleasant feelings are provided by the pleasures. Unpleasant feelings are provided by both the hurts and the bothers.

16. The pleasures are produced by sex, positive reactions, and positive stimulation. In addition, the removal of hurts and bothers releases tension and produces pleasure.

17. The hurts are produced by physical and mental effort; negative reactions from others (criticism, rejection); loneliness; envy; threats (anxiety); self-criticism, or guilt; pain; and physical discomforts, such as hunger and not breathing.

18. The bothers are produced by phenomena which are not categorized, inconsistency, phenomena which are not oriented, and differences between models and reality. The bothers hurt also, but usually to a lesser degree than the hurts.

19. Humans can experience and act on feelings without being consciously aware of them. For example, humans take each breath in response to the feeling of increasing discomfort that they experience when they do not take a breath. Humans are not normally consciously aware of this discomfort or of their decision to act and take a breath in order to get rid of it.

20. A considerable amount of excess behavior occurs in response to specific feelings which fails to obtain and conserve resources.

21. Individuals respond to current feelings and live in the present.

22. Human feelings and responses are constant in different cultures and in different historical periods.

23. There is a common set of feelings which is shared by different animal species. For example, in many species individuals associate together in order to obtain positive reactions from each other. Their desire for positive reactions is so strong that they engage in efforts to obtain positive reactions which attract the attention of predators.

24. Various animal species employ different behaviors in response to common feelings. For example, humans smile, cats purr, and dogs wag their tails to express pleasure.

25. Specific feelings are tied to specific muscle groups. For example, humans feel anxiety in their diaphragms, hurt in their lower eye sockets, and pleasure at the raised corners of their mouths.

26. Different feelings are experienced at different locations on the body.

27. Feelings which are experienced at separate locations on the body are separate feelings.

28. Feelings which are experienced at the same locations on the body are the same feeling.

29. The same feeling can be tied to different muscle groups in different animal species. For example, humans feel pleasure where they smile, cats feel pleasure where they purr, and dogs feel pleasure where they wag their tails.

Individuals

30. An individual is designed to a) get and keep resources, b) compete with other individuals for resources, c) cooperate with other individuals to get and keep resources, and d) exchange resources with other individuals.

31. Feelings encourage individuals to get and keep resources, compete for resources with others, and cooperate and exchange resources with others. An individual is encouraged to get resources by the feelings of discomfort, loneliness, and envy. Discomforts, such as hunger, thirst, and feeling hot or cold, encourage one to obtain resources which will remove the discomforts. Loneliness encourages one to seek the company of others, who provide protection and other resources. Envy encourages one to obtain the same resources that others are getting. An individual is encouraged to keep resources by the feelings of anxiety and anger. Anxiety

encourages one to take precautions. Anger enables one to aggressively protect oneself and one's resources. Also, the hurt produced by effort encourages one to avoid exertion and conserve time and energy. Because individuals experience their own feelings rather than the feelings of others, they try to satisfy their own feelings. As a result, they compete with others to obtain resources. Individuals are encouraged to cooperate with each other and exchange resources by the desire for positive reactions and the desire to avoid both negative reactions from others (criticism, rejection, and embarrassment) and guilt (self-criticism).

32. An individual experiences his own feelings. He learns about the feelings experienced by other individuals, but he does not experience them firsthand. Therefore an individual experiences his own feelings far more vividly than he experiences the feelings of other individuals. As a result, each individual spends most of his time acting for himself, thinking about himself, and communicating about himself to others.

Communication of feelings

33. The members of an animal species share a well-developed means of communicating certain of their feelings to each other.

34. Such feelings are communicated to each other through the action of the specific muscle groups associated with each feeling.

35. Simulating the actions of these specific muscle groups will enable humans to better communicate with other animal species.

36. Indicating one's feelings to others is costly in terms of a) the biological systems required to be able to do so, and b) the time and energy expended when one does so. Nevertheless, individuals frequently make their feelings known to others by various means, including sounds, facial expressions, and the movement

and position of body parts. Therefore, it must be advantageous to indicate what one is feeling to others.

37. Because feelings determine behavior, it is important to let others know what you are feeling in order that they can correctly predict how you will act and coordinate their behavior with your own. When others correctly recognize what you are feeling, they are more likely to act in an appropriate way at the appropriate time. When others correctly coordinate their behavior with your own, you have to exert less time and energy trying to get them to do so.

38. Because feelings determine behavior, it is important to know what others are feeling in order that you can predict how they will act and you can coordinate your behavior with their behavior. When you correctly coordinate your behavior with the behavior of others, you expend less time and energy dealing with others. Appropriate behavior is also more likely to be successful.

39. Signs of specific feelings carry specific messages which provide advantages. Signs of happiness (smiling, purring, tail wagging) provide others with positive reactions and enable one to obtain positive reactions and resources from them. Signs of discomfort and unhappiness, such as crying, enable one to obtain help and resources from others. Signs of anger warn others that one will aggressively protect oneself and one's resources. Signs of fear notify those one depends on for resources and protection that there are threats present. Signs of interest notify those one depends on about the presence of threats and opportunities.

40. Individuals experience their own feelings, but not the feelings of others. Therefore it is easy for individuals to fail to take into account the feelings of other individuals. When individuals show others what they are feeling, they notify others that they have feelings, they remind others that these feelings need to be taken into account, and they reveal precisely what these feelings are. Only when individuals reveal their feelings can others take them into consideration.

41. In many species a tail is a device for communicating both visually and physically what one is feeling to others. Cats use their tails to indicate alertness, interest, enthusiasm, irritation, affection, fear, discouragement, and relaxation. Humans and apes use facial expressions instead of tails for this purpose. Tails are particularly noticeable because they are a distinct appendage, move independently of the rest of the body, make pronounced movements, are frequently banded in contrasting colors, and hit against other individuals.

42. Both tails and faces indicate the nature and degree of the tension that the individual is experiencing.

Activators

43. Individuals have *activators*, or specialized behaviors which activate specific feelings in other individuals. Crying, smiling, and anger are three examples of activators in humans.

44. Different animal species use different activators to achieve a common purpose. For example, humans smile, cats purr, and dogs wag their tails as activators to obtain positive reactions from others.

45. Activators are the first social behaviors expressed by the infants of many animal species. Mewing and purring are two examples of activators in kittens.

46. Individuals cheat, or use an activator without experiencing the feeling which produces the activator, in order to get others to respond appropriately. Cheaters employ various activators, including crying, smiling, and anger.

47. The presence of activators can be used to trace the presence and evolution of certain feelings in various animal species.

Behavior

48. Feelings, consciousness, and tension are necessary and integral components of behavior. Motivation is produced by feelings, decision making requires consciousness, and priorities are established by tension, or stress. Humans and other animals could not behave without them.

49. The regular use of a specific social behavior by members of a species indicates that the behavior frequently evokes a specific feeling and a specific response in other members of the species.

50. The Parallel Feelings Hypothesis: If two different species a) use the same social behavior, and b) produce the same response in others, then c) the feeling which is evoked in others by the social behavior is the same in both species. For example, because infant humans and infant birds a) both "cry," and b) in both cases their parents respond by feeding them, then c) the same feeling is evoked in both sets of parents, i.e., a desire to avoid self-criticism, or guilt.

51. In accordance with The Parallel Feelings Hypothesis, when we can identify the feeling that is evoked in one of the two species, we can assume the same feeling is evoked in the other species. Therefore, when we know what the feeling is in humans when humans are one of the two species, we can assume that the same feeling is present in the other species.

Association and extension

52. An individual recognizes what he thinks, does, says, and owns as extensions of himself.

53. An individual recognizes a positive reaction by others to anything he thinks, does, says, or owns as a positive reaction to himself.

54. An individual recognizes a negative reaction by others to anything he thinks, does, says, or owns as a negative reaction to himself.

55. An individual considers the other individuals he is associated with as extensions of himself.

56. An individual treats negative reactions to those he is associated with as negative reactions toward himself.

57. An individual treats positive reactions to those he is associated with as positive reactions toward himself.

58. An individual views the behavior of those he is associated with as though it is his own behavior. As a result, actions which would embarrass the individual if he did them himself, embarrass him when they are done by other people he is associated with.

59. When a person is familiar with another individual's experiences, he does not experience them as the other individual experiences them. Instead, the person experiences them as he would feel if the experiences had happened to himself.

60. People "adopt" others as an extension of themselves. Thus they adopt characters in novels and films, individuals in the news, and sporting teams and players. When something happens to someone or something that a person has "adopted," the person responds as though it is happening to himself. This is the case when those who are adopted (or their resources) are threatened, or when those who are adopted succeed and receive positive reactions. People have difficulty adopting a character when the character does things which they would not do themselves, such as things which they consider bad, immoral, incompetent, immature, self-centered, selfish, foolish, stupid, rude, inconsiderate, narrow-minded, or a result of bad judgment.

Tense and release

61. Feelings involve an increase of tension or a release of tension.

62. Tension is experienced as hurt.

63. An increase in tension produces a corresponding increase in hurt.

64. Difficulty releasing tension, or the inability to release tension, prolongs hurt.

65. We try to minimize physical and mental effort because they involve tension and hurt. When we conserve time and energy, we avoid effort, and we avoid tension and hurt.

66. The release of tension is experienced as pleasure.

67. When we complete a task or achieve a goal, we release the tension that was driving us, and we feel pleasure. Therefore we feel pleasure when we complete a paper we are writing, pay off a mortgage, complete our income tax return, win a sporting competition, or get the positive reactions we want.

68. Sources of positive stimulation, such as movies, novels, amusement park rides, and certain sports, produce entertainment by providing tension and releasing it. People seek out these sources of stimulation in order to experience tension, its release, and the resulting pleasure. The more tension experienced and the greater its release, the more successful the entertainment.

69. The more tension released, and the more easily tension is released, the more pleasure experienced.

70. Humans and other animal species seek to a) avoid tension, b) release tension, and c) increase tension in order to release it and experience pleasure.

71. Warmth releases muscular tension, and this release of tension provides pleasure. Therefore humans like lying in the sun, hot showers and baths, hot tubs and whirlpools, saunas, hot drinks, hot food, smoking, heat lamps, hot water bottles, and electric heating pads.

72. Many other species like lying and relaxing in the sun, which indicates that the release of tension also provides them with pleasure. This indicates that their bodies and minds operate on the same tense and release principles that human bodies and minds do.

73. Massage is pleasurable to humans and other species because it releases tension.

74. A living organism consists of an organized system of tense and release mechanisms. These tense and release mechanisms are able to perform respiration, circulation, movement, digestion, reproduction, nervous control, mental operations, and other activities, such as yawning and sneezing.

75. It may prove possible to explain all physiological phenomena and the origin of life with tense and release models.

76. The brain evolved to coordinate tense and release mechanisms.

Effort

77. People avoid physical and mental activity because activity requires tension. People experience tension as hurt. In order to minimize hurt, individuals a) tense as little as possible, and b) release tension as soon as possible. As a result they exert themselves as little as possible, and conserve as much energy as possible.

78. People engage in physical and mental activity in response to their other feelings. They act when a) the pleasure they obtain from the activity, or b) the hurt they feel from other sources when they do not engage in the activity, outweighs the hurt they feel from exerting themselves.

79. People avoid activities in which the hurt they feel from exerting themselves is greater than the pleasure they experience from the activity.

80. People avoid activities in which the hurt they feel from exerting themselves is greater than the hurt they feel from other sources when they do not engage in the activity.

81. Something is boring or tedious because one does not obtain enough positive stimulation from it to outweigh the hurt one feels from exerting oneself to do the activity. Thus one finds it boring to reread the same material, to continue to eat the same food, or to listen to someone say something one is already familiar with, because these things no longer provide stimulation.

Models and behavior

82. Behavior is structured by mental categories and models.

83. Without models, behavior is random.

84. Each individual uses categories and models in order to act in a non-random fashion.

85. When categories or models are changed, behavior changes.

86. Individuals develop and use their own categories and models.

87. Each individual employs models in order to deal with feelings.

88. Most behavior can be explained in terms of feelings and the models employed to satisfy them.

89. Phenomena which conflict (are inconsistent) with the category or model we are using produce tension and draw our attention. This is the case a) when we scan phenomena and recognize categories, and b) when we consider and decide what to do.

90. When models are inconsistent with reality, people experience tension.

91. People act in order to rid themselves of this tension. When they act they change reality to be consistent with their models. For example, there is a glass on the left side of the table, and you want the glass to be on the right side of the table. Therefore reality (the glass is on the left side) is inconsistent with your model (you want the glass on the right side). Because of this inconsistency, you experience tension. Therefore, you act to rid yourself of this tension. You change reality (by moving the glass from the left side of the table to the right side) to be consistent with your model (you want the glass on the right side). When reality (the glass is now on the right side) is consistent with your model (you want the glass on the right side), then the tension is released, you no longer experience tension, and you no longer feel pressure to act.

92. People act to remove their greatest sources of tension. The greater the tension, the higher the priority.

93. When you employ a category or model you notice phenomena which are inconsistent with the category or model. This occurs both visually and when you consider, select, and pursue objectives. Thus you notice a weed in a garden, a boat on a lake, and a spot on a mirror, as well as reasons why a particular course of action is a bad idea.

94. People select the model and action which produces the least inconsistency with their other models, i.e., the least tension.

95. Humans and other animal species develop models, select models, and act for the same reasons.

96. The mind evolved to a) recognize categories, b) recognize inconsistencies, c) deal with feelings, d) produce models, e) select between models, and f) execute models.

Language

97. Language consists of models and submodels. We employ the same mental operations for language that we use for models and submodels.

98. A shared language based on sounds is a means by which individuals coordinate their use of the same sounds with similar categories and models.

99. In a shared language, specific sounds (or other phenomena) trigger the specific categories and models in the minds of other individuals that the sounds are associated with.

100. A shared language allows individuals to exchange and pool information about their individual categories and models.

101. In human language standardized sounds were associated with the individual categories and models that pre-humans were already employing as an animal species.

102. Human language enables humans to discuss their feelings, behaviors, and mental operations, which they and the other animal species have in common.

103. Humans are animals who can tell each other what it is like to be an animal. Humans are talking animals.

104. If we want to know what animals feel and think, all we have to do is listen to humans talk about themselves.

105. Humans speak because they feel tension to say something. Once they have said what they want to say, the tension, or pressure, is released and is no longer there. When person A finishes saying something, and person B asks person A to repeat or explain what person A has just said, person A finds it annoying to do so, because the initial tension is no longer there and person A has to force himself to comply.

106. Certain animals make sounds to other animals or to humans a) when they want something, or b) when they are bothered by something (have something to say). They stop making the sounds when a) they get what they want, or b) they have said what they wanted to say. This indicates that animals feel the same tension to make sounds that humans feel and release it in the same way. This indicates that their minds operate in the same way that human minds operate.

107. Animal species have to form categories in order to recognize phenomena, and have to formulate models and apply them in order to act non-randomly.

108. Human categories and models are primarily sensory images. Consider buying a loaf of bread, eating an ice cream cone, or having sex with a specific person. You think about these things primarily in visual images, not in words. If I say, “A kangaroo buried a watermelon in my front yard,” how do you experience this in your mind? You see your own visual images of a kangaroo, a watermelon, burying something, and a front yard, rather than collections of words in your mind which describe a kangaroo, a watermelon, burying something, and a front yard.

109. Members of a species use means such as sounds in an effort to communicate their feelings, categories, and models to each other. Thus cats use sounds for a variety of purposes, including calling, answering, indicating discomfort or pain, seeking positive reactions, trying to get others to comply with what they want (establishing consistency), criticizing, threatening, and expressing what is on their mind, such as telling about their experiences or complaining.

110. Many species use sounds in an effort to activate feelings, categories, and models in other individuals.

111. Human language enables humans to communicate in generalizations, or words, which individual humans relate to their own personal categories and models.

112. Species differ as to how specific their communications are, i.e., the degree of detail in which they can describe their categories and models. Words communicate categories and models in greater detail than basic sounds. However, human language is severely limited when it comes to communicating the full detail and complexity of categories and models. Consider how difficult it is to use words alone to describe a person's appearance to someone who has never seen the person before, and to do so well enough that he would have no difficulty recognizing the person within a crowd of people. Consider also how difficult it is to use words to describe to another person all of the details and feelings that you experienced when you watched a film, read a novel, listened to a piece of music, or took a trip. Although words enable us to easily distinguish between "a chair" and "a couch" when we talk, it is difficult to use words to accurately describe a specific chair or couch to another person. When we want to communicate something specific to others we have to provide them with a visual image by showing them the item, showing them a photograph or a drawing of it, or using gestures.

113. It is very possible that a species could evolve a language which enabled the species to communicate categories and models in much greater detail than human language. Such a species could communicate more accurately and rapidly, could achieve a much finer degree of cooperation among its members, and would be much more successful than a species that relied on human language. In fact, the gap in ability between such a species and humans might be at least as great as the present gap between humans and other animal species on earth.

114. Theoretically a shared language could be just as specific and descriptive as the personal categories and models held by individuals. Other things being equal, the closer the language of a species is to this ideal, the more successful the species.

115. One can view a potential progression taking place from sounds, to words, to increasingly specific words.

Culture

116. Because each individual uses his own categories and models, no two individuals have the identical understanding of a situation.

117. Inconsistency produces tension, and people seek to establish consistency to remove this tension.

118. In order to establish consistency, people try to get others to adopt and comply with their personal models.

119. When we see someone do something, we behave as though we are doing it ourselves. We consider others as an extension of ourselves. If they do, say, or think something we would not, we view it as a mistake on our part and act to correct it by trying to change their behavior.

120. People use a) resources, and b) negative reactions, such as criticism, to get others to adopt and comply with their personal models.

121. People adopt the personal models of those who control resources in order to get a share of their resources.

122. Culture is the net result of individual efforts to establish consistency within a specific group.

123. A society or culture is a collage of individual, group, and organizational models.

124. Many individual and group models produce more negative results than positive results.

125. By focusing on the differences between cultures we have overlooked the greater significance of the similarities between humans. Differences between cultures are inconsistent, produce tension, and attract our attention. Similarities between humans are consistent, do not produce tension, and do not attract our attention.

126. The ability of humans to communicate in greater detail through words has enabled human individuals to communicate their specific likes and dislikes to each other and to establish a much more elaborate repertoire of correct and incorrect behaviors in their societies than have other species. Although other species are concerned with avoiding negative reactions, they do not communicate or understand criticism in as fine detail as do humans and therefore do not adjust their behavior to as fine a degree. Therefore other species do not a) wear clothes, b) hide their sexual activity and elimination from others, or c) stand up straight, cover their mouths when they yawn, and use napkins.

127. A species which uses a language that is more specific than human language will have rules for correct and incorrect behavior that are more detailed than the rules used in human

cultures. Humans will be unable to understand these rules or act in accordance with them, just as animals do not understand or act in accordance with human rules. Therefore, human behavior will appear as crude and uncouth to such a species as the behavior of animals does to humans.

Categories and models

128. Humans see, hear, smell, taste, think, and talk in terms of categories.

129. Categories are an efficient means of dealing with sensory phenomena.

130. Recognizing and using categories is work.

131. The brain seeks to minimize the work it does.

132. It is less work to use simple categories and fewer categories than it is to use complicated categories and more categories.

133. It is less work to continue using the same category than it is to change categories, and it is less work to continue using the same model than it is to change models. Therefore it is easier to continue doing the same activity than it is to change to a different activity.

134. Phenomena which are not categorized produce tension and attract notice.

135. Categories are formed by recognizing repetition. The more repetition there is, the easier it is to categorize phenomena. When humans speak and write, they use synonyms in order to avoid repetition which will produce a second, competing, unwanted, distracting category in the mind of the listener or reader.

In poetry and song, on the other hand, humans use repetition to produce additional rhythmic patterns in the mind of the listener. Music consists of repetitive sounds, sequences, and phrases which enable the listener to establish categories. Music relies heavily on numerous forms of repetition, and to a much lesser extent on symmetry, to produce categories.

136. The organization of phenomena into a category releases tension and produces pleasure.

137. The quest for positive stimulation is the search for unfamiliar phenomena to categorize.

138. People use the arts, learning, entertainment, and travel in order to organize unfamiliar phenomena into new categories and thereby experience pleasure. The arts include music, painting, sculpture, literature, poetry, photography, film, architecture, crafts, fashion, and decoration.

139. Successful art is designed a) to be different from existing categories so that it is not already categorized and therefore produces tension and is interesting, and b) to be easily categorized so that the tension is released with little effort and pleasure is easily produced. Orientations are employed by artists to enable phenomena to be easily categorized, and orientations are violated by artists to a limited extent to produce tension and interest.

140. The fewer categories that are needed to categorize phenomena, the less effort is required, and the more attractive the phenomena. For example, lakes and lawns can be categorized with few categories and are peaceful and pleasing, and because younger faces have fewer features than older faces with wrinkles, spots, and sagging areas, younger faces can be categorized with fewer categories and are more attractive.

141. When you deal with unfamiliar phenomena you notice aspects of the phenomena that you have not yet categorized. You no

longer notice aspects of the phenomena that you have already categorized.

142. Once phenomena are categorized, they are no longer stimulating. No tension remains to be released. No matter how attractive a specific phenomenon is initially, once it has been fully categorized, it is no longer interesting. This is true of art, literature, music, architecture, clothing, jewelry, other possessions, and a person's appearance.

143. The play activity of the young provides parents and other adults with positive stimulation, i.e., pleasure. Members of a species value, maintain, and protect their sources of pleasure.

144. Models relate categories together, and are an efficient means of dealing with categories.

145. Models are also used to explain unknowns. It is important for our survival that we be able to recognize and explain unknowns, because unknowns may constitute threats or opportunities.

146. Learning consists of the placement of phenomena into categories and models.

Orientations

147. Human orientations are based on the structure and operation of the brain.

148. Humans employ orientations in order to reduce the effort the brain has to make to scan, recognize, and locate phenomena.

149. The use of orientations reduces the number and complexity of the categories that the brain has to recognize.

150. Phenomena which are not oriented produce tension.

151. The orientation of phenomena releases tension and produces pleasure.

152. The more oriented phenomena are, the less tension is produced, and the more attractive the phenomena.

153. The less oriented phenomena are, the more tension is produced, and the less attractive the phenomena.

154. When one employs orientations, one reduces differences and increases similarities. Therefore phenomena that are oriented are easier to categorize.

155. The brain gets the individual to act and establish and maintain orientations in order to reduce the number and complexity of the categories the brain has to deal with.

156. The use of orientations enables human brains to easily organize phenomena into categories. Examples of human orientations include symmetry, repetition, rectangles, circles, straight lines, horizontal and vertical, parallel and perpendicular, consistency, centering, equidistant placement, simplicity, perfection, thoroughness, uniform edges and surfaces, grouping on the basis of similarity, and the use of solid colors.

157. An orientation can be approximate; it does not have to be mathematically perfect. Thus the colored designs on the individual members of a species can be approximately symmetrical, centered, or repetitive. An orientation only has to be close enough to perfect for the members of the species to be able to recognize the orientation. Humans use tools to apply their orientations with mathematical precision.

158. The presence of an orientation in the appearance of members of a species indicates that members of that species respond to that

orientation. For example, if the facial or bodily designs on members of the species are symmetrical, centered, or repetitive, then members of that species respond to that orientation.

159. The symmetrical, centered, and repetitive designs on the faces and bodies of individuals are aesthetically pleasing to the members of that species.

160. Individual differences in designs on faces and bodies result in individuals appearing more or less attractive than other individuals to members of their species.

161. Specific orientations and violations of orientations are used to draw attention to specific areas of the body.

162. Other species, such as termites and bowerbirds, orient their environments in order to reduce the work of their brains. By applying and maintaining their orientations they are able to reduce the number and complexity of the categories their brains deal with.

163. Many other animal species have the same orientations as humans.

164. The orientations that are used in the colored designs on nonhuman species are the same orientations that humans employ in their construction and decoration of clothes, vehicles, everyday objects, architecture, and the arts, and also in their behavior.

165. The extensive use of repetition and symmetry in a) the designs on nonhuman species, and b) the designs that humans use for and on their clothes, vehicles, everyday objects, and architecture indicates that nonhumans and humans form categories in the same way and therefore their minds operate the same way.

166. The more repetition there is in phenomena, the more easily people can categorize the phenomena.

167. Symmetry is a form of repetition. In symmetry, one half of the design repeats the other half, but from the opposite direction.

168. Symmetrical objects provide more repetition than do asymmetrical objects. Therefore they are easier to categorize and as a result are more attractive than asymmetrical objects.

169. Symmetrical faces provide more repetition than do asymmetrical faces. Therefore they are easier to categorize and as a result are more attractive.

170. An individual's body maintains an approximate symmetrical appearance between the right and left halves as the individual develops and ages.

171. Humans apply orientations to their objects and behavior to produce the categories they want to perceive and want others to perceive.

172. Humans violate the orientations in order to produce tension and attract attention. In order to attract attention they use contrasting colors, off-center placement, diagonals, and inconsistency.

The mind

173. The fact that the mind and the body both a) resist effort, b) experience fatigue, and c) are better able to handle difficult tasks after a period of rest indicates that they operate in a similar manner.

174. The mind seeks to a) recognize inconsistency, and b) establish consistency.

175. The brain seeks to minimize the number of categories it has to process.

176. The brain seeks to reduce the complexity of the categories it has to process.

177. The human brain gets humans to expend physical effort which enables the brain to reduce mental effort. For example, the brain uses orientations to reduce the number and complexity of the categories it has to process.

178. Humans can only focus on one category or model at a time.

179. When we focus on one category, we do not recognize other categories.

180. When we focus on a category, we have to give up our previous category. Therefore we often forget what our previous category was.

181. Other animal species also have single-focus minds.

182. Pack hunting is so successful because prey focus on one predator, or category, at a time.

183. Our progress in science is so slow because each individual has a single-focus mind. We can only focus on one category at a time. Therefore, when we consider one category, we cannot consider others. Our single-focus mind can only perform one mental operation at a time. Thus we can only make one observation, develop one category (or model), or apply one category (or model) to data at a time. Because we have a single-focus mind, it is very difficult for us to observe and analyze at the same time. We have to do one or the other. Therefore, we have to do science through piecemeal accumulation, and add one bit of information or analysis at a time.

184. A species whose individuals have multiple-focus minds could deal with more than one category (or model) at a time, and could perform more than one mental operation at the same time. Such a species could understand situations and behavior, respond

appropriately, and develop science and technology at a much faster rate than a single-focus species. In comparison with a multiple-focus species, a single-focus species would be mentally retarded. A multiple-focus species could be produced through a) evolution in certain environments, b) genetic engineering, or c) the design of artificial intelligence.

185. A group is a collection of individuals whose single-focus minds are focused in different directions. Therefore a group operates as a multiple-focus mind, which recognizes more opportunities and more threats than an individual would recognize alone.

186. The more individuals there are in a group, the larger the number of threats and opportunities that are recognized.

Consciousness

187. We are made consciously aware of phenomena that need to be dealt with. These may be inconsistencies, difficulties, obstacles, or problems. Once we are consciously aware of them we can consider and decide how best to deal with them. We deal with them in order to remove them from our consciousness.

188. Consciousness is a decision-making apparatus. Any species that makes decisions has consciousness.

189. The analysis of decision making in a species reveals the nature of consciousness in that species.

190. Consciousness is a focusing mechanism. Consciousness enables us to focus on a specific subject and consider other factors relative to it. Consciousness can focus on broad subjects or highly specific subjects.

191. Consciousness and vision both focus on one subject at a time.

192. The mind forms one model, or image, at a time, and must dissolve the old model to form the new one. As a result a person often forgets what their previous model was.

193. The primary role of consciousness is to add, remove, and rearrange behaviors.

194. Any species that makes decisions to add, remove, or rearrange behaviors has consciousness.

195. Consciousness recognizes, selects, and applies models.

196. Physical and mental activities require conscious attention when they must be learned or changed. They must be changed when it becomes clear they are inappropriate and when obstacles are encountered.

197. Conscious attention is required to examine and select alternatives. Examining and selecting alternatives require much more conscious attention than applying and monitoring routines.

198. Physical and mental activities which are repeated without change become routines. They can be executed very quickly because they require little conscious attention except to monitor their execution and their relevance.

199. Because conscious attention and selection involves more mental operations than does the execution of routines, it is much slower.

200. The more tension produced by a phenomenon, the more likely one is made consciously aware of the phenomenon.

201. One must apply conscious attention when a) one recognizes things, b) one tries to find something, c) one tries to understand what is happening, d) one tries to understand why something is happening, e) one chooses between alternatives, f) one decides how to deal with a situation, g) one decides how to deal with

changes, h) one decides what one ought to be doing, i) one sets objectives, j) one decides how and when to carry out objectives, k) one decides what one needs to have in order to carry out objectives, l) one establishes priorities, m) one decides whether to act, n) one decides what to do next, o) one decides what to do in the future, p) one thinks about what could happen, q) one decides why one should not do things, r) one takes precautions, s) one recognizes obstacles, t) one decides how to act when one encounters obstacles, u) one solves problems, v) one decides how to make improvements, w) one checks on one's progress, x) one recognizes that one needs to find an alternative, y) one realizes that the situation is different than one thought, z) one tries to change one's behavior, aa) one tries to change the behavior of others, bb) one imagines a possible outcome, cc) one imagines a desirable outcome, dd) one dreams, ee) one considers or decides what to do if something happens, ff) one recognizes when something significant happens, gg) one considers past events, hh) one thinks about what one should have done, or ii) one evaluates things and events.

202. Any species which does one or more of the activities mentioned just above has consciousness.

The study of brain and behavior

203. Rather than view each species as having a unique evolutionary past, unique mental operations, and unique behaviors, it is more useful to view different species as sharing a common set of mental operations and behaviors which have been modified for survival in particular niches.

204. We have assumed that the behavior of each species is unique.

205. However, the behavior that is unique to a species is a thin veneer over a common set of feelings, behaviors, and mental operations which are shared with other animal species.

206. By focusing on the differences between species we have overlooked the greater significance of the similarities between species. Differences between species are inconsistent, produce tension, and attract our attention. Similarities between species are consistent, do not produce tension, and do not attract our attention.

207. Feelings, categories, models, consciousness, and communication did not originate with humans. They originated with animals. Humans have them too because humans are animals.

208. Language and technology did not free humans from their animal programming, but rather gave humans more power to implement their animal programming on each other and their environment.

209. Perhaps the biggest obstacle to understanding ourselves is our pretentiousness, or the belief humans are unique, special, and important, and more so than other species. This pretentiousness has interfered with and delayed our understanding of a) our location in space, b) our evolution, c) our mind and behavior, and d) the similarity between human nature and animal nature, and our realizing that e) other species have as much right to the environment as we do.

210. Humans work very hard to try to identify differences between themselves and other species.

211. The refusal of the scientific community to recognize the role of feelings and consciousness in animal behavior is the equivalent of the scientific community's refusal in the past to recognize evolution or the rotation of the planets around the sun. This refusal is a major impediment to our progress in understanding behavior.

212. If an alien attempted to understand human behavior, but ignored human feelings and consciousness, how accurate would the

research findings be? Similarly, when humans attempt to understand the behavior of another animal species, but ignore feelings and consciousness, how accurate are the research findings?

213. Every behavior of humans and other animal species can be understood in a scientific manner.

214. Each and every thing an individual does reflects the structure and operation of the brain.

215. An understanding of human behavior and the human mind will likely precede and produce a greater understanding of the behavior and minds of other animal species.

216. Science seeks to accurately explain the maximum amount of phenomena in the simplest way. This should be the goal of studies of behavior also.

217. We will find simple ways to accurately describe and explain behavior, the mind, and the brain.

Humans and other species

218. Human exploitation of other species is based on superior power rather than natural right.

219. Humans act like the Nazis of the animal kingdom, and treat other species worse than Nazis treated Jews.

220. Just as the Nazis envisioned a Thousand-Year Reich for their race, humans envision a long and glorious destiny for their species on earth and in space.

221. Humans do not act any better or any worse than any other animal species would act if it had moved into the dominant position.

222. The argument that "it is acceptable for humans to harm animals provided humans are benefited" is no different than the arguments that "it is acceptable for Europeans to harm Africans provided Europeans are benefited," "it is acceptable for men to harm women provided men are benefited," and "it is acceptable for Nazis to harm Jews provided Nazis are benefited."

223. Other animal species are so similar to us, that when we do something to another species, we might as well be doing it to ourselves.

224. Humans live as though they are the only species on earth that matters. They do not consider the consequences of their actions for the members of other species.

225. Humans consider each individual human precious, but each individual member of other species insignificant.

226. The reluctance of humans to view members of other species as individuals makes it easier for humans to mistreat them.

227. Humans do not want to accept that members of other animal species have feelings and thoughts comparable to their own.

228. Humans show an almost complete lack of empathy and respect for members of other animal species, who are experiencing many of the same feelings and thoughts that humans would experience if humans were in their situations.

229. Human abuse of the members of other species far outweighs whatever good humans do.

230. The food chain is cannibalism on a large scale. Animal species are so similar to each other, that animal-eating species are effectively eating themselves.

Humans and the environment

231. Humans are in the process of converting the entire earth to human use at the expense of other species.

232. Humans find the appearance of nature chaotic and irritating. Therefore they apply human orientations to nature in order to reduce the effort of looking at it. Thus they produce lawns, gardens, and parks which conform with human orientations. Human orientations include the extensive use of rectangles, circles, straight lines, parallel and perpendicular, horizontal and vertical, repetition, symmetry, consistency, perfection, centering, solid colors, equidistance, thoroughness, uniform surfaces and edges, and grouping on the basis of similarity.

233. The more thoroughly a species establishes and maintains an oriented environment which reduces the work of the brain, the more successful the species.

3. USING ORIENTATIONS

Brief contents

Detailed contents	49
Introduction	53
Human orientations	56
Exercises	57
Specific orientations	61
The application of orientations	118
Focus, categories, orientations, and familiarity	135
Feelings associated with orientations	137
Exceptions to the orientations	155
Alternative shapes	166
Advantages of the orientations	178
Disadvantages of the orientations	182
Why people have orientations	185
Society and orientations	203

continued on the next page

Orientations and the environment 205

Evolution and orientations 207

Detailed contents

Introduction 53

Human orientations 56

Exercises 57

- Exercise 1: Human constructions 57
- Exercise 2: Placement of objects 58
- Exercise 3: Solid colors 58
- Exercise 4: Horizontal and vertical rectangles 59
- Exercise 5: Repetition 59
- Exercise 6: Cutting out a picture 60
- Exercise 7: Parallel alignment 60

Specific orientations 61

- Uniform surfaces 61
- Uniform edges 66
- Solid colors 66

  - Table 1: Type of clothing worn 69

- Straight lines 70
- Rectangles and squares 72
- Circles 75
- Horizontal and vertical 77
- Parallel and perpendicular 78
- Symmetry 82

  - Model 1: The relationship between symmetry and repetition 86

continued on the next page

Centering 88
Repetition 90
Equidistance 92
Simplicity 92
Perfection 94
Thoroughness 102
Consistency 106
Grouping on the basis of similarity 113
Multiple orientations 115

The application of orientations 118

Architecture 119
Decoration 120
Interior design 121
Christmas decorations 122
Poetry 124
Music 126

Exercise 8: Music and repetition 126

Photography 131
Dance 132
Gardening 134

Focus, categories, orientations, and familiarity 135

Feelings associated with orientations 137

Applying orientations 137

Model 2: Orientations and feelings 138
Model 3: Orientations, reality, tension, and action 144

Orientations and pleasure 153

Exceptions to the orientations 155

Disorder 155
Approximations 157
Perspective 158
Functional requirements 158
Asymmetrical use of symmetrical components 159
Independent origins 160
Conserving time and energy 160

Model 4: Frequency of contact with phenomena and application of orientations 162

Intentional violations 162

Model 5: Limited order 163

Alternative shapes 166

Ovals 166
Diagonals 168
Triangles 169
Diamonds 171
Hearts 172
Figures with more than four sides 173
Stars 174
Trapezoids 175
Other designs 175

Advantages of the orientations 178

Disadvantages of the orientations 182

continued on the next page

Why people have orientations 185

Phenomena and categories 186
Repetition and symmetry 188
Focus and categories 194

Exercise 9: Width of focus 194
Exercise 10: Moving one's focus in order to see all of a category 194
Exercise 11: Greater ease of looking at a single category, rather than at two or more categories 196

Brain and work 198
Non-visual categories 201
Orientations and positive stimulation 201

Society and orientations 203

Orientations and the environment 205

Evolution and orientations 207

Introduction

Imagine that you are a guest on an alien planet with an alien civilization that uses language and technology. The alien population of the planet numbers in the billions and as you travel around the planet you notice numerous individual and regional differences in dress and behavior. However, the one thing that stands out to you is their obsession with triangles. Everywhere you go you see triangles. Their houses and buildings are triangular and form tetrahedrons. Their walls, windows, doors, tables, and chairs are triangular. In fact their doors and walls even have triangular panels for decoration. Their furniture, appliances, fixtures, floor tiles, books, computers, picture frames, packages, containers, and signs are triangular. They often use triangular decorations on their clothes and other fabrics. Moreover their military is organized into triangular formations. You do see other shapes, but these always occur less frequently than triangles. In many rooms and buildings, almost everything you see is triangular in shape. You realize that if everything triangular were removed, there would be almost nothing left. You wonder whether this fixation on triangles is a reflection of their natural environment. But when you visit wilderness areas on their planet you do not see a single triangle. Instead much of their plant life is oval in shape. You wonder whether this love of triangles has always been there, and you make a point of visiting ancient and prehistoric sites. But always, no matter where you go or what you examine, you see a preference for triangles. Therefore you decide to ask your hosts why they prefer triangles. At first they do not know what you are talking about. But after you have explained, they reply that this is the most practical shape. Everything fits together well, and triangles are structurally one of the strongest shapes. When you mention other shapes they could adopt, they repeatedly ask, “Why would anyone choose a different shape?” You draw some different shapes and ask what they think of them. They reply that other shapes are certainly interesting, but they are not as satisfying as triangles. It becomes clear that they find triangular shapes more comfortable and more aesthetically pleasing than other shapes. You realize that this preference for triangles is an innate feature of

their species. They can and do produce other shapes, but they continue to gravitate toward triangles because they find them more attractive than the alternatives. You conclude they must be biologically programmed to prefer triangles. You decide their brains must be structured to work best with triangles. Their brains have encouraged them to produce a triangular environment because this is the most efficient setting for the operation of their brains.

You invite your hosts to visit earth, so they can realize that it is possible to use other shapes. And after their visit to earth is over, you ask them what they have learned. They tell you that as they traveled around earth they noticed numerous individual and regional differences in dress and behavior. However, the one thing that stood out to them was the human obsession with rectangles. Everywhere they went they saw rectangles. Human houses and buildings are rectangular and boxlike in shape. Human walls, windows, doors, tables, and chairs are rectangular. In fact their walls and doors often have rectangular panels for decoration. Their furniture, appliances, fixtures, books, computers, floor tiles, picture frames, packages, containers, and signs are rectangular. Rectangular decorations are often present on their clothes and other fabrics. Moreover, their military is organized into rectangular formations. The aliens admitted that they did see other shapes, but these occurred less often than rectangles. In most rooms and buildings, almost everything they saw was rectangular in shape. The aliens realized that if they removed everything rectangular, there would be almost nothing left. They had wondered whether this fixation on rectangles was a reflection of the natural environment of earth. But when they visited wilderness areas on earth they did not see any rectangles. Instead earth's plant and animal life existed in other shapes. The aliens wondered whether this love of rectangles had always been there, and they made a point of visiting ancient and prehistoric sites. But always, no matter where they went or what they examined, they saw a preference for rectangles. Finally the aliens asked humans why they preferred rectangles. At first humans did not know what the aliens were talking about. But after the aliens explained, humans replied that this was the most practical shape. Everything fits together well. Nevertheless, when the aliens persisted, humans admitted that rectangular structures are not as strong as

triangular structures. When the aliens mentioned other shapes that humans could adopt, humans repeatedly asked, “Why would anyone choose a different shape?” The aliens drew some different shapes and asked what the humans thought of them. The humans replied that other shapes are certainly interesting, but they are not as satisfying as rectangles. It became clear to the aliens that humans find rectangular shapes more comfortable and more aesthetically pleasing than other shapes. The aliens realized that this preference for rectangles is an innate feature of the human species. Humans can and do produce other shapes, but they continue to gravitate toward rectangles because they find them more attractive than the alternatives. The aliens concluded that humans must be biologically programmed to prefer rectangles. They decided that human brains must be structured to work best with rectangles. Human brains have encouraged humans to produce a rectangular environment because this is the most efficient setting for the operation of human brains.

Although the preference for rectangles is a very important human orientation, it is by no means the only human orientation. The purpose of this volume is to examine and illustrate human orientations. We will identify the directions in which our brains influence us to construct a human environment in which human brains operate most efficiently.

It is important to realize that there are an infinite number of possible designs and arrangements. However, humans remain fixated, or obsessed, with very few of these. We will examine various human orientations. These include using rectangles, straight lines, planes, and circles in a horizontal or vertical, parallel or perpendicular fashion, while at the same time employing uniform surfaces and edges, solid colors, centering, equidistance, symmetry, simplicity, repetition, perfection, thoroughness, consistency, and grouping on the basis of similarity. When phenomena do not fit these orientations, people feel bothered, irritated, annoyed, or disturbed, and the phenomena intrude on their consciousness. On the other hand, when phenomena fit these orientations, people feel comfortable and satisfied and are not inclined to notice them. Because phenomena which do not comply with human orientations are a source of tension, people constantly seek to impose their orientations on phenomena in order that people will no longer feel bothered by them. When they orient phenomena, this tension is

released, and the release of tension is experienced as pleasure.

Orientations serve various purposes for humans. Most important, using orientations enables people to reduce the work of the brain. The orientations enable the brain to simplify and reduce the number of categories it has to deal with. They permit the brain to identify categories with greater ease, to identify fewer categories, and to work more efficiently. This advantage outweighs the physical costs of establishing and maintaining an oriented environment. In addition, orientations enable people to better a) cope with gravity, b) use less resources, such as time, energy, and materials, c) provide shelter and protection, d) avoid injury, e) establish compatibility, f) improve quality, g) increase predictability, h) transmit more information, i) control the environment, and j) complete tasks.

Certain liberties are taken to avoid cumbersome phrases and qualifications. The word "rectangles" is often used to include squares. The words "rectangular" and "rectangular structure" are frequently used to refer to a rectangular cuboid, or a boxlike structure, in which all angles are 90°, but the length, height, and depth are not necessarily the same. And the phrase "at an angle" is used to refer to straight lines and edges which are not horizontal, vertical, parallel, or perpendicular.

Human orientations

1. There are an infinite number of possible shapes and arrangements of shapes.

2. The chance that two individuals or two cultures acting independently will produce the same shape or arrangement of shapes is one divided by infinity ($1/\infty$).

3. The chance that three individuals or cultures will independently invent the same shape or arrangement of shapes is $1/\infty^2$, or $1/\infty^{n-1}$ (where n is the number of independent occurrences). The chance of 10 independent occurrences would be $1/\infty^{n-1}$, or $1/\infty^9$.

4. Therefore the chance that humans will independently invent a particular shape or arrangement more than once is practically zero.

5. The chance that humans acting independently would invent the same shape or arrangement multiple times becomes much smaller the more times it occurs.

6. Nevertheless, humans do repeatedly invent and use the same small number of shapes and arrangements in their constructions and endeavors.

7. Moreover, humans use this small number of shapes and arrangements in every area of human activity, in every culture, and in every historical period.

8. Therefore humans are programmed to prefer these specific shapes and arrangements.

Exercises

The following exercises will help the reader become more aware of orientations in humans.

Exercise 1: Human constructions

Look around the area you are currently in. In your mind, erase every item of human construction which is a horizontal or vertical a) straight line, b) rectangle, or c) circle. What percent of the items of human construction still remain? Do this in any other area you are in.

Exercise 2: Placement of objects

Take twenty index cards or playing cards and divide them into two groups of ten cards each. Clear a table and draw an imaginary line through the center so that the table is divided into two equal halves. Take ten of the cards and place them one at a time on one half of the table. Take the other ten cards, and hold them about three feet above the other half of the table. Drop them one at a time on the surface. You should now have twenty cards on the table. On one half of the table are the ten cards you placed there, which we will call Placement One. On the other half of the table are the ten cards you dropped, which we will call Placement Two. Consider the two placements. How does Placement One differ from Placement Two? The identical kind and number of objects are involved in both placements. If no biases are involved, Placement One should look similar to Placement Two.

Exercise 3: Solid colors

Go to an area where you can observe a large number of people one at a time. At the top of a sheet of paper write "Total" on the left side, "Partial" on the right side, and "None" on the back side. Observe what each individual is wearing. As well as you can, look at coats, jackets, shirts, blouses, pants, and/or skirts. Place a mark under "Total" if everything you see the person wearing is solid colored, a mark under "Partial" if only some of the items that the person is wearing are solid colored, and "None" if nothing the person is wearing is solid colored. Do this for 100 people and determine the percent in each category. Next look at your own clothes in your closets and drawers and estimate what percent are solid colors.

Exercise 4: Horizontal and vertical rectangles

During a twenty-four hour period, mark on a sheet of paper how many different uses of horizontal or vertical rectangles and squares you see. Consider sidewalks, roads, signs, billboards, lawns, parking lots, trimmed hedges, houses, buildings, sheds, barns, columns, patios, decks, porches, walls, partitions, floors, ceilings, windows, doors, panels, corridors, heating and cooling equipment, lighting panels, bookcases, books, desks, pieces of paper, envelopes, file cabinets, file folders, bulletin boards, blackboards, erasers, briefcases, computer equipment, countertops, cabinets, tables, drawers, beds, pianos, stoves, refrigerators, washing machines, dryers, pictures, mirrors, shades, carpets, boxes, containers, place mats, napkins, bath mats, tiles, electronic equipment, music and movie cases, paper money, credit cards, identification cards, luggage, mail boxes, public telephone booths, buses, trucks, trains, television programs and advertisements, and anything else you see. Mark on the other side of the sheet how many of these rectangles and squares are of natural (non-human) origin.

Exercise 5: Repetition

During a separate twenty-four hour period, mark down on one side of a sheet of paper how many different uses of repetition you see. Repetition is the use of two or more identical copies of an object, feature, or design at the same time within a single area or on a single object. Look at bricks, blocks, boards, tiles, fences, telephone poles, light poles, vehicles, sidewalks, windows, shutters, doors, columns, radiator vanes, chairs, tables, desks, filing cabinets, file folders, three-ring binders, drawers, cabinets, blackboards, display cases, racks, wastebaskets, planters, lighting fixtures, wallpaper, picture frames, end tables,

containers, handles, knobs, switches, sockets, controls, hangers, buttons, uniforms, rails, blinds, curtains, signs, canopies, dishes, eating utensils, place mats, candlesticks, speakers, towels, bed linens, post office mail boxes, public toilets and sinks, lockers, parking places, parking meters, and anything else you see. When you see three or more identical copies, estimate in what percent of the instances the copies are placed equidistant from each other.

Exercise 6: Cutting out a picture

Select a picture or advertisement in a newspaper or magazine, cut it out, and tape it to a blank sheet of paper. If you are doing this exercise, do not read further until you have completed the instructions in the previous sentence. After you have completed the instructions, answer the questions on Exercise 6 on page 62.

Exercise 7: Parallel alignment

Over a week mark on a sheet of paper each time you position or reposition an object to make its edge parallel with a neighboring edge. This includes sheets, bedspreads, pillows, bath mats, towels, clothes, shoes, books, magazines, paper, pens, pencils, place mats, napkins, eating utensils, rugs, pictures, tables, chairs, cushions, cars, bicycles, telephones, computers, appliances, containers, and numerous other objects. How do you feel before and after you "straighten" the object? What advantages, if any, are achieved by straightening each object?

Specific orientations

We will consider specific orientations and also the use of two or more orientations at the same time. These include the following:

Uniform surfaces	61
Uniform edges	66
Solid colors	66
Straight lines	70
Rectangles and squares	72
Circles	75
Horizontal and vertical	77
Parallel and perpendicular	78
Symmetry	82
Centering	88
Repetition	90
Equidistance	92
Simplicity	92
Perfection	94
Thoroughness	102
Consistency	106
Grouping on the basis of similarity	113
Multiple orientations	115

Uniform surfaces

Uniform surfaces are surfaces which are consistent in appearance. They tend to be regular, continuous, constant, orderly, and undeviating. Normally the same material, texture, color, and decoration are used over the entire surface. Everything is the same. The advantage of a uniform surface is that it usually can be recognized and surveyed with a single category. Look at a wall or ceiling. See how easily your vision moves across the surface. Notice how you are interrupted when your vision encounters a different surface, such as a separate wall, a picture, a light fixture, a bookcase, a piece of furniture, or a window,

Questions concerning Exercise 6

Do not read the following until you have completed Exercise 6 above.

Did you a) cut out a rectangle, b) trim the edges around it so that the picture or advertisement is centered, c) center the picture or advertisement between the two sides of the piece of paper, and d) position it so that its edges are parallel and perpendicular with the edges of the piece of paper? Now remove the picture or advertisement and tape it to the piece of paper at an angle so that it is not parallel and perpendicular with the edges of the paper. Do you find this arrangement less pleasing than the first one? Next select another picture or advertisement in a newspaper or magazine, cut it out the quickest way you can without bothering to obtain a specific shape, and tape it at any angle on the piece of paper. How much more time and energy did you spend the first time you cut out the picture or advertisement when you followed the instructions at the beginning of this exercise? What did you gain by the extra effort you put into the task the first time you did it? Ask another person to follow the instructions in the first sentence of this exercise on page 60, and watch what they do.

---

because each requires a different category. The more uniform a surface, the more easily your vision moves across it.

> My favorite activity is golf. Aside from the game itself, what I like best are the well kept and almost manicured courses. #7016

When a surface is composed of more than one material, texture, color, or design it has an inconsistent appearance and requires more than one category to consider it.

Most objects constructed by humans have uniform surfaces. The surface may be flat or curved, smooth or rough, decorated or undecorated. Humans go to an enormous effort to ensure that the entire surface is uniform. They give considerable attention to any inconsistent areas and work hard to "correct" them so that they will appear identical to the

rest of the surface. This may entail redoing, refinishing, or simply touching up.

> The supermarket provides us with plastic bags for our groceries. When we get the groceries home, I take them out of the bags, wad the bags up, and stuff them in a container to use in the future whenever we need them. Today my wife told me, "Don't wrinkle them up. Fold them neatly." She wants to reuse the bags when customers buy goods at her retail store. She needs the surface of the bags to be nice and smooth. She won't use the bags if they have lots of wrinkles, because they will look very unattractive to everyone. #7016A

> In my neighborhood most people identify with their lawns. Everyone wants to have the perfect lawn. They like to have large areas of grass at the front and back of their house and want all their grass the same height. They mow their lawns every few days and then use a grass trimmer to shorten the grass around trees and the edges of their houses to be the same height as the rest of their lawn. It's a rare day that you do not hear the loud noise of power mowers and grass trimmers. They don't want any blemishes in their grass. I see them using a special tool for digging out dandelions and weeds and carrying pails to put them in. Some don't put any plants or trees in their yards because this would interfere with a perfect plane of grass, and it would make it more difficult to cut the grass in perfect rows parallel or perpendicular to the street. Instead, they place their plants and flowers along the edges of their house. However, they are not satisfied tending and viewing their own lawns. They want to look around the whole neighborhood and see seas of grass the same height everywhere they look. When one person failed to cut his grass for several weeks because he was busy planting and tending trees, a neighbor constantly made suggestions that he cut it and said, "Are you going to cut your grass soon? We take pride in our lawns. Everyone cuts their grass." Afterwards, this neighbor quit talking to him altogether. Next this neighbor and other neighbors reported him to the police and a policeman visited him and checked up on him afterwards. The policeman told him he should cut his grass once a week and also trim it around the trees. There is a city bylaw that a homeowner will be heavily fined if he continues to let his grass grow more than six inches high. #7017

> People are usually quick to notice when a surface becomes dented, scratched, marked, ripped, chipped, or punctured, and can become

> quite upset over this. When they purchase an item, they want to find one without a flaw or inconsistency on its surface, even when the imperfection does not interfere in any way with the usefulness of the item. #7018

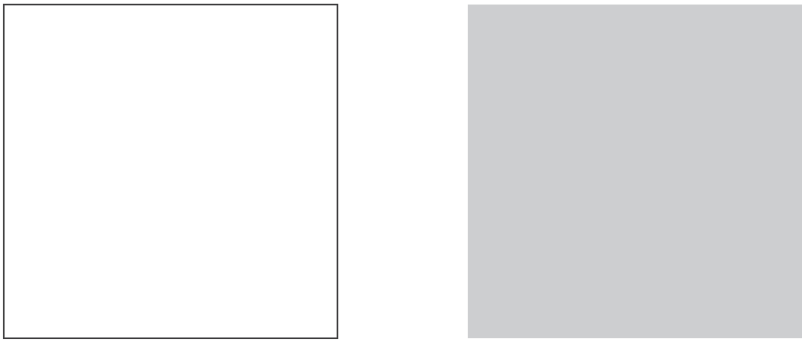
> All of my underwear is identical. Every pair is the same in regard to brand, size, and color. I have bought this underwear at different times, and as a result some pairs are older and some are newer. When I first buy the underwear the elastic waistband, which is 1 3/8 inches wide, is flat and smooth. But over time the elastic ages and the waistband becomes increasingly wavy and bumpy. When I choose a pair of underwear from my underwear drawer each morning, I always look for a pair with a waistband which is flat and smooth, instead of distorted. The wavier and bumpier the waistband, the less attractive it is. There is no difference in the fit of the underwear. It's just that the pairs with flat and smooth elastic waistbands look so much nicer and more attractive. #7018A

There is also a definite tendency to produce and use flat surfaces, or planes. This is seen with roads, sidewalks, fields, lawns, parking lots, halls, floors, walls, tables, counters, and ceilings. Many of these planes are rectangular. However, one also sees planes which are not rectangular, such as parks and lawns which do not have rectangular borders. People often use planes as visual barriers behind which to store the wide assortment of objects which they possess. Such planes include walls, doors, cabinets, and drawers. In order that the flat surface of certain appliances, such as television sets, stoves, and air conditioners, is not visually interrupted, dials, switches, and fuses are sometimes placed behind flat panels. In a similar way, the complexity of an automobile engine is hidden beneath a smooth hood.

If a design or pattern is placed on a surface, it is often repeated in order to provide more uniformity. This is the case when a design is placed on a tile or linoleum floor, on wallpaper, or on a piece of cloth. Normally the units of construction or the elements in a design are repeated exactly, in order to produce more uniformity. This is the case with a brick wall when all of the bricks are the same size and color and are perfectly aligned with each other.

The more uniform a surface, the easier it is for the brain to scan and categorize it. As seen in Figure 1, it is less work for the brain to scan and categorize the figures labeled A, than it is for the brain to scan and categorize the figures labeled B.

A



B

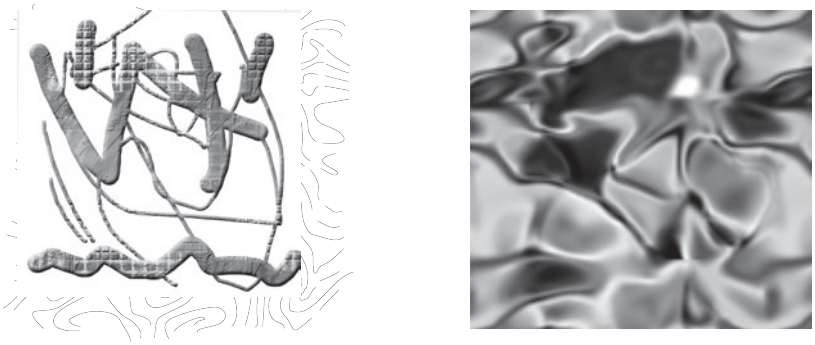


Figure 1: It is less work to scan and categorize uniform surfaces (A) than surfaces that are not uniform (B).

Uniform edges

Uniform edges refer to edges which are similar from one part to the next. They are normally straight or curved, and give the appearance of a flowing line or curve. Uniform edges can be described as regular, continuous, smooth, neat, steady, consistent, even, undeviating, constant, tidy, clean, and/or perfect. The opposite of this is an edge that is irregular, or not uniform. Such an edge may be rough, broken, uneven, wavering, jerky, misshapen, discontinuous, interrupted, imperfect, crooked, and/or not flow in a clean line or curve.

As seen in Figure 2, it is less work for the brain to scan and categorize edges that are uniform (A) than edges that are not uniform (B).

Most objects produced and used by humans have uniform edges, and humans go to considerable effort to ensure that the edges of objects are uniform. Uniform edges are extremely common and are much more pleasing to humans than edges which are not.

Solid colors

People show a strong preference for solid colors. This is one of the most common orientations. Often an entire object is produced in a single color. This is generally the case with items of clothing; with many houses, buildings, vehicles, walls, ceilings, appliances, furniture, instruments, and machines; and with numerous small items, including coins, keys, combs, bars of soap, paperclips, picture frames, pans, pots, other kitchen utensils, eating utensils, file folders, three-ring binders, and boxes. Humans have the technology to produce individual items with hundreds or thousands of colors if they choose to do so.

As seen in Figure 3, it is less work for the brain to scan and categorize solid colors (A) than it is to scan and categorize multiple-colored items (B).

Most objects which are composed of more than one color, have a single color which predominates. Thus an object which is a solid color may acquire one or more additional colors when decorations, fixtures, features, controls, and/or labels are added. Often the additions are composed of a single color. Thus a door which is painted brown, acquires a second color with the addition of a brass doorknob and hinges, and a gray file cabinet acquires a second color with the addition

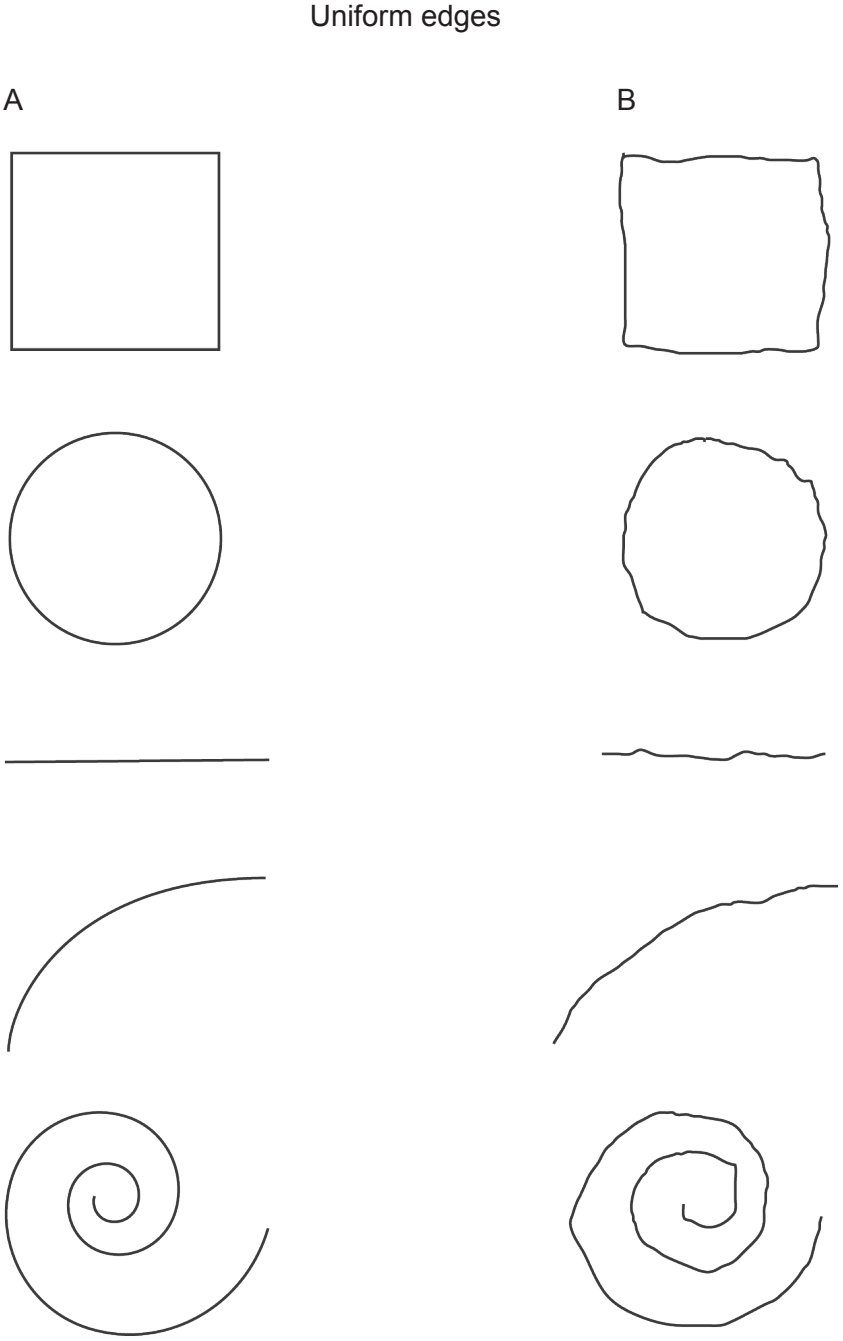


Figure 2: It is less work to scan and categorize uniform edges (A) than edges that are not uniform (B).

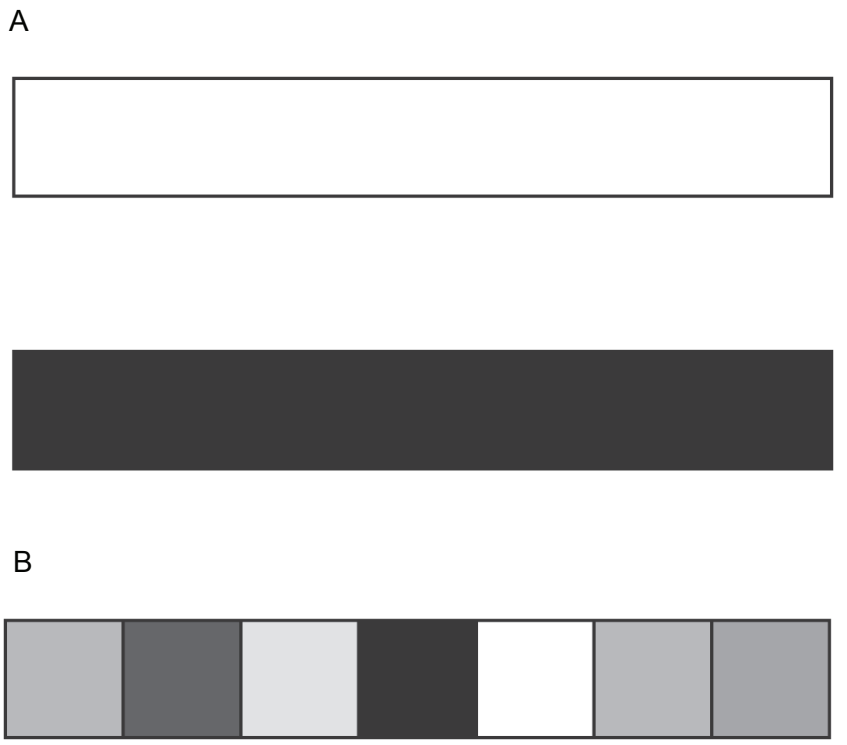


Figure 3: It is less work to scan and categorize solid colors (A) than multiple-colored items (B). (Different shades are used here to represent different colors.)

of aluminum-colored handles, label holders, and locks. Nevertheless, the brown of the door or the gray of the file cabinet remains the dominant color. A different color is frequently used to draw attention to a particular feature, such as a handle, an on-and-off switch, or a message display. Separate colors are frequently used on controls to identify different kinds of operations. Thus on a computer keyboard, letter keys may be tan, function keys gray, and numerical keys black.

Solid colors are used more frequently than are various forms of decoration. This is revealed in the tabulation on the next page. See Table 1.

Table 1: Type of clothing worn

M = males
F = females
( ) = number of individuals present

	Heads of university departments in a meeting with the dean		Students in a university class	
	M (9)	F (2)	M (17)	F (19)
Pants - solid color	9	1	17	19
Skirt - repetitive design		1		
Shirts				
solid color	3	2	7	12
solid color with a different colored design in the middle			4	2
solid color with a different colored logo at the side			2	
vertical stripes	3			
horizontal stripes	1		1	3
symmetrical plaid	1		2	
asymmetrical plaid	1			1
Jacket - solid color with a symmetrical design added to it			1	1

Straight lines

People show a strong preference for straight lines. One normally sees the straight line used as a guiding principle in the placement and/or shape of buildings, houses, roads, sidewalks, fences, telephone poles, light poles, electric power poles, plants in fields and gardens, trees and bushes in yards, parking spaces for cars, headstones in cemeteries, desks in classrooms, door handles on a car, and written and printed text. Objects of different shapes and sizes are often placed in a straight line relative to each other. Thus notices of different sizes may be arranged on a bulletin board so that their top or bottom edges are all in a straight line, and different kinds of controls on an electronic device may be placed in a row such that a straight line could be drawn through their centers.

> When I cut a piece of paper or wrapping paper, I do my best to make sure I cut it perfectly straight. If I see I haven't, I trim it to make it straighter. I may end up trimming an edge two or more times, and often spend more time trimming it than I did cutting it in the first place. When it's crooked or curved, it looks sloppy. It looks so much better when it's straight. #7019

People also refer to straight lines in expressions such as "I have to draw the line," "Hold the line," "Lay it on the line," "He's out of line," and "We have to straighten this out."

As seen in Figure 4, it is less work for the brain to scan and categorize straight lines (A) than it is to scan and categorize other shapes (B).

Often people seek to make surfaces more attractive and pleasing by employing additional decorative straight lines. These are added to clothing, buildings, sidewalks, walls, doors, windows, fireplaces, furniture, appliances, computers, vehicles, stationery, advertisements, signs, packages, and numerous other objects. Decorative straight lines are usually placed horizontal or vertical.

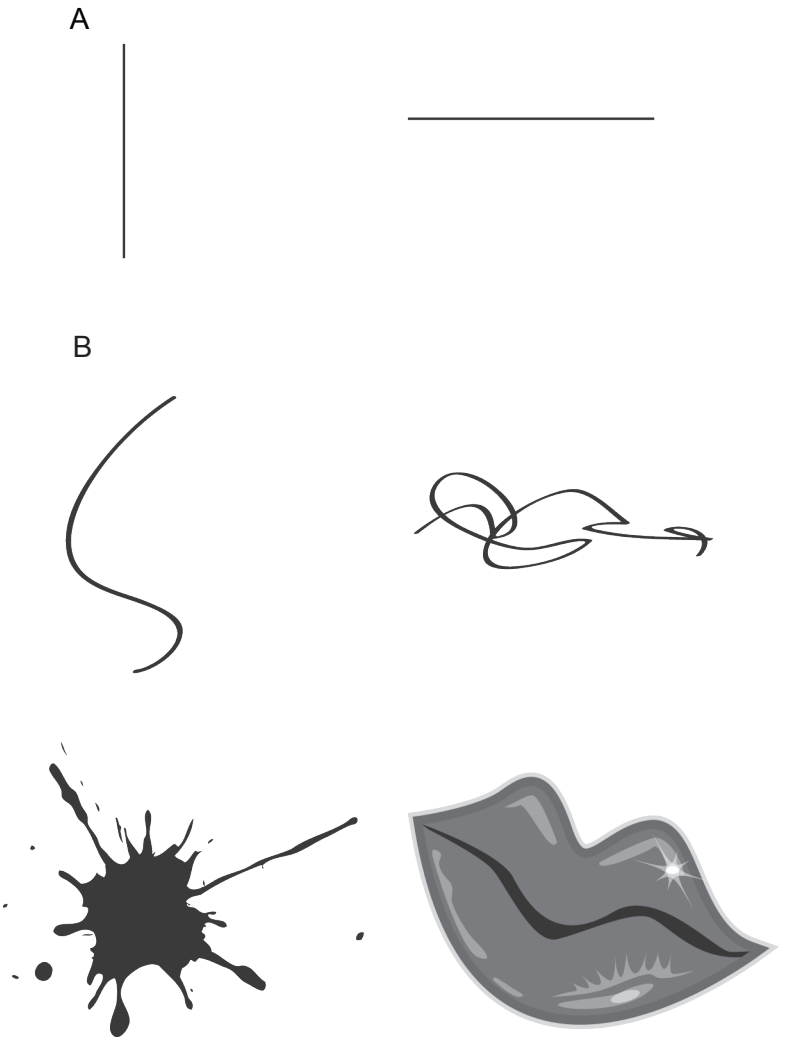


Figure 4: It is less work to scan and categorize straight lines (A) than other shapes (B).

Rectangles and squares

Probably the most common shape employed by people is the rectangle. In most cases in which people employ planes, the planes are rectangular. A large percentage of the objects constructed and used by humans are rectangular in shape. When objects are three dimensional they are usually composed of rectangles at right angles to each other. People use rectangular houses, buildings, yards, flower boxes, trimmed hedges, rooms, walls, partitions, windows, doors, cabinets, refrigerators, stoves, washing machines, dryers, beds, tables, lighting fixtures, rugs, tiles, towels, bath mats, napkins, handkerchiefs, file cabinets, file folders, pieces of paper, photographs, computers, keyboards, keyboard keys, copiers, printers, cards, board games, paper money, magazines, books, book cases, desks, drawers, blackboards, blackboard erasers, pictures, mirrors, calendars, stereos, musical recording covers, containers, boxes, bags, signs, flags, sports fields, ball courts, swimming pools, large trucks, and railway cars. Residential, commercial, and agricultural property often consists of rectangular lots. A rectangular grid of squares is used in excavating archaeological sites. Military units drill, parade, and often fight in rectangular formations. Type on a page is usually justified at both sides to present a rectangular appearance. Cloth is woven on rectangular frames. Children use wooden and plastic blocks to build play structures. People use rectangular game pieces to play cards, dominoes, Scrabble, Mahjong, craps, and Tetris.

Information is often presented within rectangles. Thus forms and invoices are often subdivided into rectangular sections, separate rectangles are indicated by different colors, and two-dimensional boxes are provided in which to mark one's answer or choice. Controls and information are normally enclosed within rectangles on appliances, vending machines, and paper copiers, as well as in computer programs. Information, articles, pictures, drawings, and advertisements in newspapers, magazines, and books are presented in rectangles and rectangular columns and often enclosed within rectangular borders. Financial and other numerical information is usually presented within rectangles on television programs. Dials and controls on the dashboard of automobiles are frequently enclosed within rectangles.

Rectangular designs are commonly added to objects. They are incised into concrete walls for decorative purposes. Rectangular door frames surround doors and rectangular panels embellish doors. Extra rectangles are added to buildings by alternating colors or materials to create additional rectangular planes or frames. Many houses are decorated with additional rectangles at the sides of windows in the form of fake shutters. These shutters are usually a) fastened permanently to the outer wall, b) too narrow to cover the window if one could move them, and c) a different color than their surroundings in order to emphasize them. They are sometimes placed on one side of the window only. Often the existence of rectangles, such as doors or windows, is emphasized by coloring them or their surrounding edges differently than the neighboring structure. Frequently rectangular planes are composed of smaller rectangles. Thus walls are built of bricks, construction blocks, or boards. The mortar is a different color than the bricks and blocks, and acts to outline them and emphasize their rectangular shape.

People even convert certain items which are not rectangular into rectangular form. Thus when people store clothing, they frequently fold shirts, pants, and sweaters into squares.

> I work on a crew every summer thinning and clearing woods. When the foreman maps out lots for us to cut, he makes them rectangular, even when other shapes would better match the area of woods we have to cut. #7020

As seen in Figure 5, it is less work for the brain to scan and categorize rectangles and squares (A) than it is to scan and categorize other kinds of shapes (B).

People frequently use squares in place of rectangles. In fact sometimes rectangles are composed of two or more squares. Thus a window may consist of an upper square and a lower square. There is the question of whether squares should be included with rectangles in a single orientation, or whether squares should be a separate orientation from rectangles. Squares sometimes seem more appealing aesthetically than rectangles, suggesting they may constitute a separate orientation.

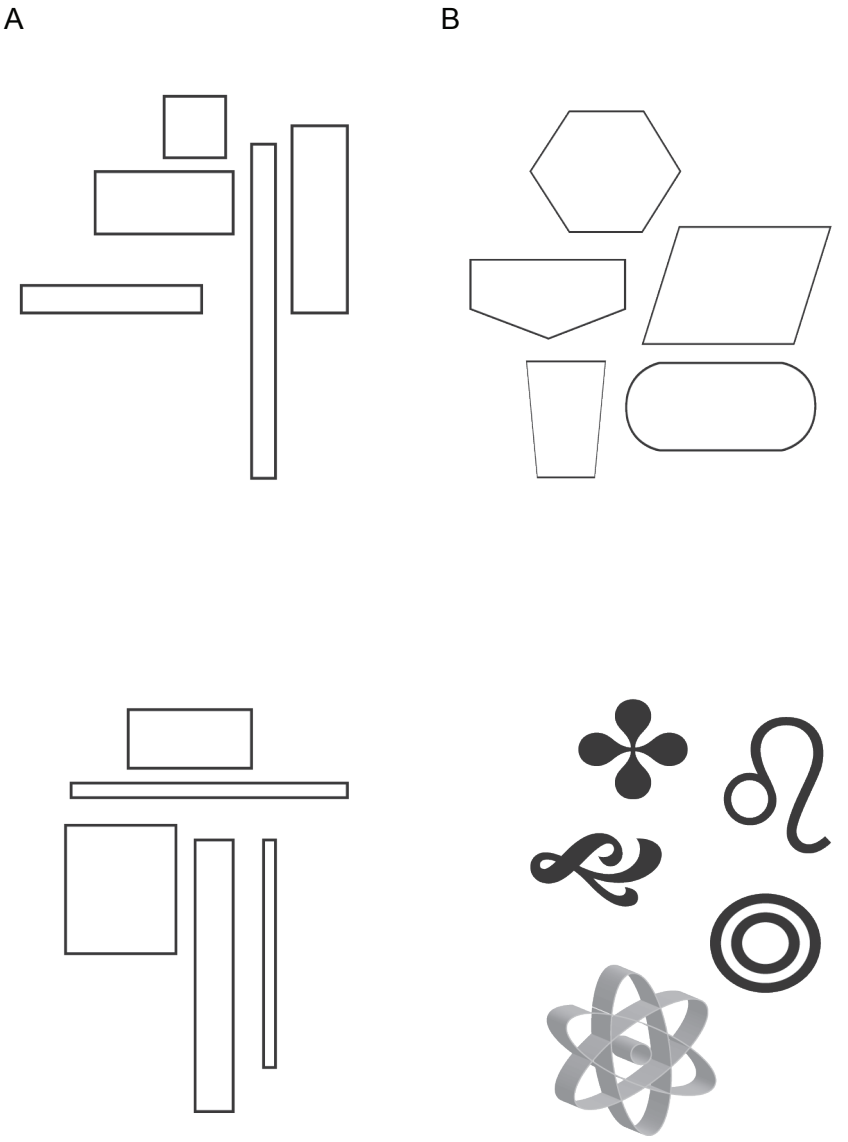


Figure 5: It is less work to scan and categorize rectangles and squares (A) than other kinds of shapes (B).

All four sides of squares are the same length. In contrast, in rectangles (as defined here) the height and width differ. Therefore there is greater repetition in squares than rectangles, which would explain their greater attraction. Interestingly, squares are used less often than rectangles.

Circles

Another shape that is very commonly employed by people is the circle. Circles are frequently used in the design of coins; tokens; poker chips; dishes; tables; rings; bracelets; cakes; pies; cookies; doughnuts; pizzas; communion wafers; containers; tops of containers; faces of watches, clocks, and gauges; music and movie disks; drums; cymbals; shields; UFOs; doorknobs; wreaths; life preservers; portholes; wheels; steering wheels; headlights; openings in car bodies for gasoline; nail heads; fountains; flower beds; windows on clothes dryers; buttons; hats; manhole covers; doors in bird houses; yo-yos; Slinkies; Frisbees; tops and bottoms of pots, pans, cups, and bowls; and manual controls on electrical equipment, such as stereos, radios, television sets, and microwave ovens. Circus performances, sumo wrestling, cockfights, and bullfights are conducted in a circle. Pieces for games, such as checkers and Go, are often circular. Although the human head is not circular, the head is often drawn as a circle on traffic and other information signs. Halos are also circular, even though this is inconsistent with the shape of the head. Occasionally chairs in a room are arranged in a circle, and people form a circle to discuss things. In addition, half circles and quarter circles are frequently added to the ends and corners of rectangles.

The circle is commonly used in religion and science in the construction of models. One example was the use of circles rather than ellipses by Copernicus to describe planetary orbits.

> I am part Micmac, and people on the reservations here are involved with traditional native religion. The circle is very important to native peoples, and we do everything in a circle. #7021

As seen in Figure 6, it is less work for the brain to scan and categorize circles (A) than it is to scan and categorize other "circular" shapes (B).

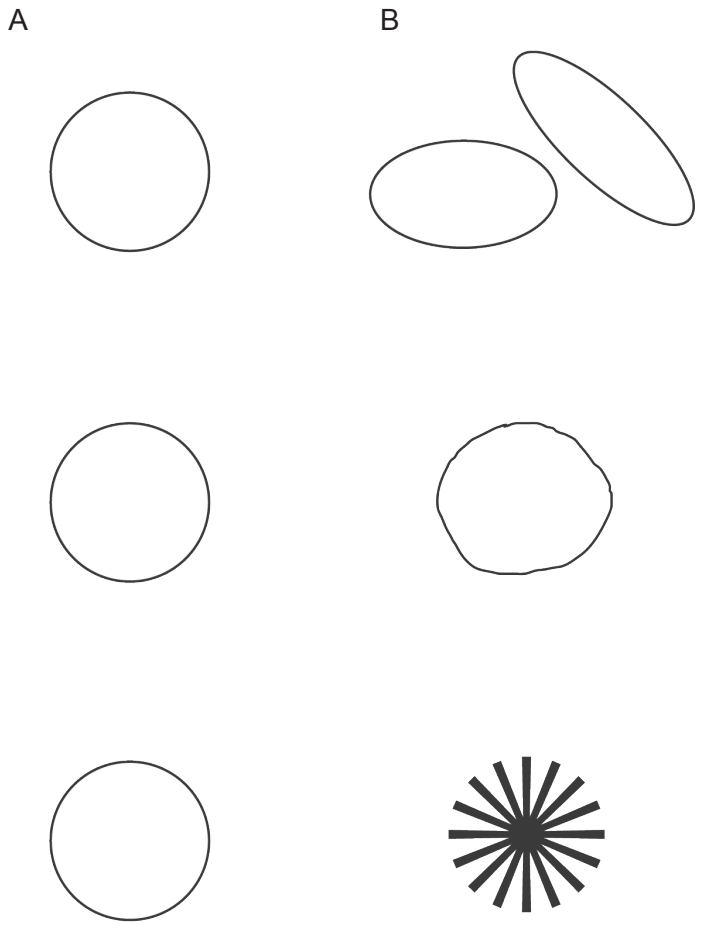


Figure 6: It is less work to scan and categorize circles (A) than other "circular" shapes (B).

Circles are also used three dimensionally. This is seen in spheres, such as balls, globes of lamps, and certain pots and vases. It can also be seen in cylinders, such as the legs of many tables and chairs. Circles are also employed in frustums, such as lamp shades and many waste-baskets. A sphere has a circular appearance, regardless of the angle from which it is viewed. Similarly a half sphere on top of a cylinder has the appearance of a half circle on top of a rectangle.

Horizontal and vertical

Straight lines, planes, and circles are normally constructed horizontally or vertically. Horizontal straight lines are employed in the form of stripes on walls, in the placement of words on signs, in the location of handles on drawers, and in designs on the bodies of cars, trucks, airplanes, and other vehicles. Horizontal straight lines and stripes are added to a person's appearance through the use of belts, sashes around the waist, hat brims, hatbands, headbands, close fitting necklaces, certain collars, arm bands, bracelets, cuffs, certain rings, leg and ankle bands, straight lines on clothing, and socks which are exposed and contrast in color with neighboring surfaces. The bottoms of coats and skirts are designed to be horizontal when they are worn. Buttonholes are usually horizontal or vertical. Languages are written and printed either horizontally or vertically. When people want to read material that is turned at an angle, they frequently rotate the material or rotate their head so that the material is more horizontal or vertical relative to their eyes. Music notation relies largely on horizontal and vertical straight lines. Signs, posters, and notices are attached to walls and windows with their top edge horizontal. Horizontal planes are used for floors, ceilings, roofs, steps, patios, plazas, shelves, desks, beds, and tables. When a structure is built on a surface which is not horizontal, the straight lines of the structure are normally adjusted to run horizontal, instead of parallel to the surface on which the structure is resting. Thus when a house is built on sloping ground, the bricks, boards, windows, and roof are aligned horizontally and not parallel to the sloping ground.

Vertical straight lines are used in decorating walls and furniture, in the placement of handles on cabinets, in charts and graphs, and in the Universal Product Code, which enables us to use a laser scanner to quickly identify items. Vertical straight lines and stripes are frequently placed on clothing and uniforms. Seams, pleats, creases, fringes, and suspenders add vertical straight lines. Those who wear tights and stockings with seams attempt to keep the seams vertical. Vertical planes are used in the construction of walls, furniture, and certain columns.

There are also situations where both or either horizontal and vertical are used. When there is a transition from one solid color to another, the transition normally occurs along a horizontal or vertical straight line.

Plaid designs on clothing combine horizontal and vertical straight lines and stripes. The exterior of houses is often composed of boards or vinyl siding arranged either horizontally or vertically. Usually these are of identical width and length and add a set of equidistant straight lines to the house's appearance.

> At home the females put up the Christmas decorations. The males sit back and tell us what looks good where. They point out when something is crooked and when it is straight. #7022

> Our computer programs let us move icons around on the screen, and the icons frequently end up out of alignment. However, the programs include features, such as "Arrange Icons" or "Straighten Up," which realign all the icons for us in perfect horizontal and vertical rows. #7023

> When you have a watch with a blank face, you have to estimate the time based on the direction of the hands and where you think the numbers should be. It's easy to tell time when the hands are pointed vertically or horizontally, and it's hard to tell time when the hands are pointed at an angle. I find that the closer the hands are to being vertical or horizontal, the easier it is to tell time. #7024

As seen in Figure 7, it is less work for the brain to scan and categorize things that are horizontal and vertical (A) than things that are at other angles (B).

Parallel and perpendicular

Straight lines or planes are generally placed parallel or at right angles to each other. Thus the front edge of a house is normally parallel to the road; sidewalks are parallel to roads; furrows are plowed parallel to each other; most pieces of furniture in a house are placed parallel to a wall; edges of sheets, blankets, and bedspreads are aligned to be parallel with the bed frame or floor; addresses and stamps are placed parallel to the top and bottom edges of an envelope; floor boards are aligned parallel to walls; writing and print runs parallel to the top edge of the paper; and the grain in wooden furniture usually runs parallel to the long edges of the furniture. At the same time, driveways and fences are generally placed perpendicular to a road (even when the road curves),

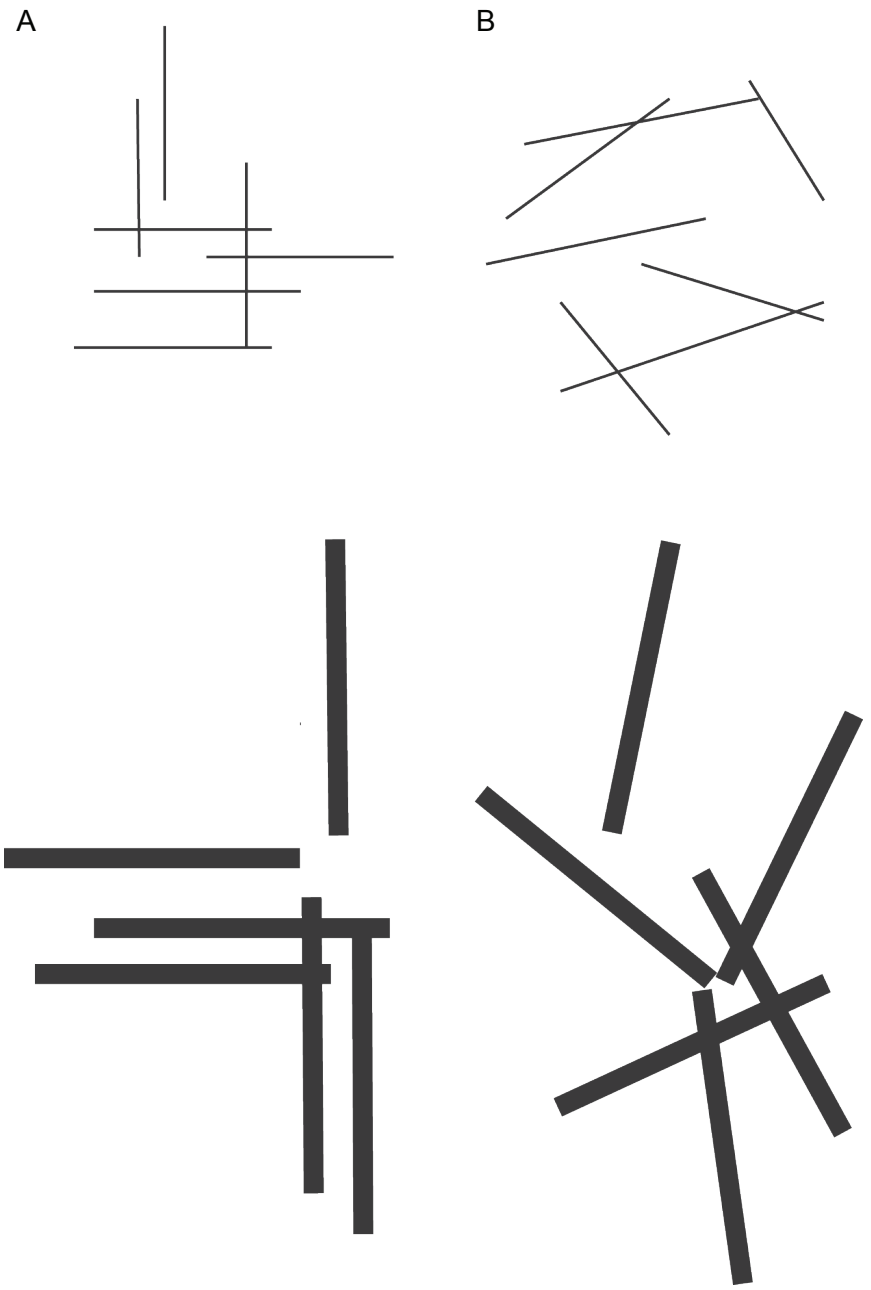


Figure 7: It is less work to scan and categorize things that are horizontal and vertical (A) than things at other angles (B).

eating utensils and napkins are placed perpendicular to the edge of the table (and parallel to each other), tops and bottoms of containers are perpendicular to the body of the containers, and the ends of pieces of wood and pipe are cut at right angles to their length.

> I have a round table with a line down the middle where you can add extra leaves when you want to expand it. Whenever I move the table, I make sure it stays positioned so this middle line is at right angles to the wall. It doesn't look good when the line is turned at some other angle. #7025

> Sometimes when I use a copier, I haven't lined up the page I'm copying properly, and the copy comes out turned at an angle. If it is too much at an angle, I throw it away and make a straighter copy, even though the first copy has all the information I want. #7026

> I wanted to hang up several pictures in my apartment. However, it was getting dark outside and I realized there wasn't enough light to be sure I was hanging them up perfectly straight relative to each other and the other items in the room. So I decided to wait until the next day. #7027

> The carpenters are fixing the outside wooden wall of the apartment house where I live. When they stop work at the end of the day they put their boards in one stack and the discarded sticks of wood in another stack. They line up the wood in both stacks so it is exactly parallel to the wall. They also put their sawhorse next to a bench on the patio and line it up so it forms a continuous line with the bench. I think they are just trying to leave things looking neat. #7028

> On days when I give a quiz in class I find it annoying if the students' desks are not arranged in proper rows. Often the desks are pulled into numerous short rows of several desks each. So before I pass out the quiz, I try to get the students to line up the desks in long parallel rows perpendicular to the center aisle, but it's an uphill struggle. When the desks are in proper rows it's easier to pass out the quizzes and collect them, and to walk between the rows to answer a question or to check on cheating. On other days when I'm not giving a quiz it doesn't matter as much to me how their desks are. Occasionally I have students pull their desks into small circles for discussion groups. After a class with discussion groups some of the students pull their desks back into rows and others don't. If the janitor comes in right after class, he

> gets bothered that the desks are not in proper rows for the next class, and tries to straighten them himself. I also noticed the other day that when I entered the classroom there was a table right in front of the podium. I might have left it alone, but the table was turned at a very noticeable angle and I would have found it disconcerting to try to lecture with it in that position. So before I did anything else I straightened the table so it was parallel with the podium. #7029

As seen in Figure 8, it is less work for the brain to scan and categorize things that are parallel and perpendicular to each other (A) than things that are at other angles to each other (B).

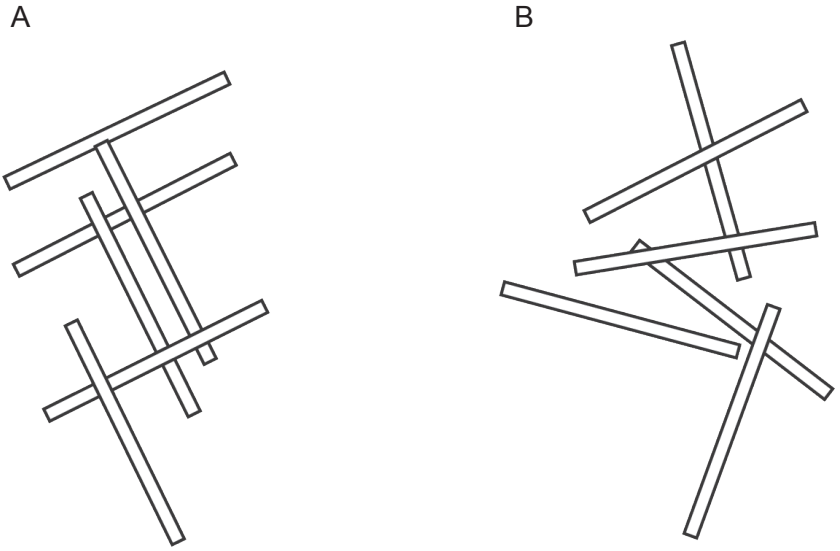


Figure 8: It is less work to scan and categorize things that are parallel and perpendicular (A) than things that are not (B).

Because of the preference for parallel and perpendicular straight lines and planes, it is not surprising that rectangular shapes are so frequently used. When two different rectangular objects are placed relative to each other, normally they are positioned so that certain edges of the two objects are parallel and other edges are perpendicular. For example, the back of a chest of drawers is usually placed against a wall, and as a result the back and front of the chest become parallel to the wall, and

the sides of the chest run perpendicular to the wall. When rectangular objects are placed on rectangular surfaces they are usually positioned so that the edges of the objects are parallel with and perpendicular to the edges of the surface.

People also employ parallel and perpendicular placement in relation to surfaces and edges which are not linear or rectangular. Thus when an edge is circular, objects are often placed parallel or perpendicular to it. In a circular house, furniture is often placed in a circular fashion alongside the perimeter wall, and inside walls may be built which are perpendicular to the perimeter wall. Similarly, benches may be placed parallel with the edges of a circular fountain or pool, and words may be written in a circle around the edge of a plate or around the lid of a jar. Concentric circles are parallel to each other. Parallel and perpendicular placement is also used with edges which are neither linear nor circular. Thus houses may be placed parallel or perpendicular to an irregular edge, such as at a beach, hill, or ledge.

In dance, gymnastics, and figure skating one or more arms or legs are frequently held perpendicular to or parallel with the body.

Symmetry

Symmetry is an extremely common orientation. There are many forms of symmetry, the most common of which is that the two sides are mirror images of each other. Most clothing, furniture, and vehicles, as well as many buildings, houses, and hair styles are symmetrical. Symmetry is used in countless instances. Examples range from designs on quilts and rugs; to displays in grocery stores; to formations of jet planes; to ice cream concoctions, such as banana splits; to the placement of ropes and knots in bondage; to the location of Christmas decorations; to arrangements of flowers in vases and on cars in wedding processions. The layout of articles, pictures, and advertisements on each page of a book, newspaper, or magazine is commonly symmetrical. The positions taken by soldiers in battle and teammates in sports are often symmetrical.

> Esthetic dentists design teeth which match the size and shape of the teeth on the other side of the face. In the past they made all the teeth

> the same color, which did not look lifelike. Not only are some teeth lighter and some darker, but some individual teeth are lighter in one area and darker in another. Now esthetic dentists use different shades to try to ensure that the tooth colors are the same on both sides of the mouth. Another thing they do is to try to match the shape of the tooth to the shape of the face. Thus they design square teeth for square faces, ovoid teeth for ovoid faces, and tapering teeth for tapering faces. However, this is done so that the upper teeth are vertically symmetrical with the shape of the head. Thus a tapering upper tooth, which is narrow at the gum and wide at the end, is used for a person with a tapering head, which is wide at the crown and narrow at the cheeks. #7030

Stylized pictures of the heart, such as on valentines, are symmetrical. Figures, such as stars, triangles, and ovals, are usually positioned so that their right and left halves are mirror images of each other. For example, five-pointed stars are normally placed so that their two bottom points are on a horizontal plane and their single uppermost point is centered. Often when one modifies an object that is symmetrical, one does so in such a way as to maintain symmetry. For example, when one rolls up one's shirt sleeves, one rolls both sleeves to the same height; when one cuts one's fingernails, one cuts them the same length on both hands; when one trims one's beard or mustache, one trims it so that each side mirrors the other; when one applies makeup, one applies it equally to both sides of the face; and when one adds padding to the shoulders of a jacket or to a brassiere, one adds equal amounts to both sides.

> I frequently readjust the sash on my robe so the two ends are about the same length when they are tied together. I think it looks sloppy if one end hangs down much more than the other. #7031

> When the barber finishes cutting my hair, I always check that my sideburns are the same length. Once they weren't and I had to get him to fix them. #7032

Most gestures using two hands or arms are symmetrical, and many gestures using a single hand are symmetrical. Games involving visual images are often symmetrical. Examples include "Cat's Cradle" and "Here's the church."

As seen in Figure 9, it is less work for the brain to scan and categorize things that are symmetrical (A) than things that are asymmetrical (B).

An individual's body maintains an approximate symmetrical appearance between the right and left halves as the individual develops and ages. As a result one sees a symmetrical arrangement in regard to the amount and distribution of hair, fat, muscular development, freckles, and wrinkles. For example, baldness progresses in the same shape on both sides of a male's head. As a result a person maintains a symmetrical appearance. This makes it easier for others to see him as a single object, and makes his appearance more pleasing to others.

It is useful to distinguish between certain types of symmetry. A distinction will be made here between a) mirror symmetry versus repetitive symmetry, b) perfect symmetry versus approximate symmetry, and c) immediate symmetry versus delayed symmetry. The first distinction is between mirror symmetry and repetitive symmetry. In the case of mirror symmetry, each side is the exact reverse, or mirror image, of the other side. This is the case with a pair of gloves, because the shapes of the fingers of our two hands are mirror images of each other. A different approach to achieving symmetry is to make one side a repetition of the other, or repetitive symmetry. Thus a store may have a "SALE!" sign on the right side and a second "SALE!" sign on the left side of a display window. The two signs are duplicates of each other, not mirror images, but they still give the window a symmetrical appearance. In order to form a mirror image one would have to reverse the word "SALE!" on one of the signs.

Sometimes an object appears to have mirror symmetry, but when one makes a close comparison one discovers that the object actually uses repetitive symmetry. We should not be surprised that mirror symmetry and repetitive symmetry are easily confused. This is because symmetry is simply repetition, when one half of repetition is reversed. If one has two identical copies of an object, and then reverses one of the two copies, one produces symmetry. Conversely, repetition is simply symmetry, when one half of symmetry is reversed. If one has two sides of a symmetrical object and reverses one of the sides, one produces two identical copies, or repetition. These relationships are stated in Model 1 on page 86.

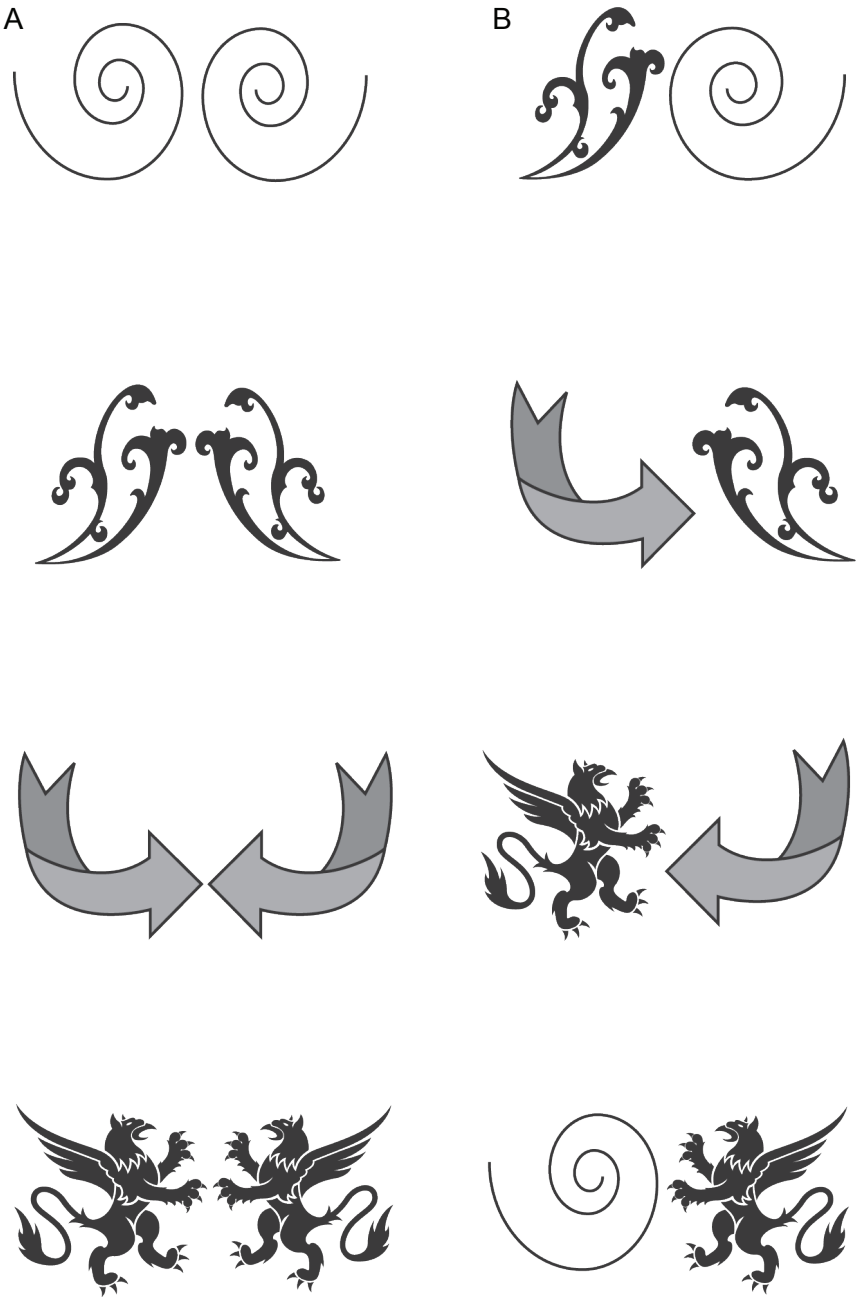


Figure 9: It is less work to scan and categorize things that are symmetrical (A) than things that are not (B).

Model 1: The relationship between symmetry and repetition

➤➤ = repetition
➤➤ = symmetry
↳ = reverse

One half of repetition reversed = symmetry

Example: ➤➤ = ➤➤
↳

One half of symmetry reversed = repetition

Example: ➤➤ = ➤➤
↳

The next distinction is between perfect symmetry and approximate symmetry. In the case of perfect symmetry, one side is the exact duplicate of the other, only reversed. With perfect symmetry one can detect no differences between the two sides. Approximate symmetry, on the other hand, provides less than perfect symmetry. In some manner the two sides are not exact copies of each other. They are similar in certain ways and different in others. Thus the two sides differ in one or more features, but may be similar in number, bulk, shape, or function. For example, people may place two different vases, figurines, or photographs on opposite sides of a surface, such as a mantelpiece. Similarly a heraldic device may include two different objects of similar bulk, such as a unicorn and a lion, on opposite sides. Likewise, because people are not identical in size and appearance, when a photographer takes a photograph of a group of people, he often arranges the people on the basis of size, clothing, and posture in order that the photograph will have a more

symmetrical appearance. Approximate symmetry does not represent an inferior or substandard form of symmetry. An object does not need a greater degree of symmetry than it takes for the brain to recognize that the object is symmetrical. In many cases of symmetry one cannot tell the extent of the symmetry without making a careful part-by-part comparison back and forth between the two sides of the object. Nevertheless, one should also realize that the more symmetrical an object is, the more pleasing it is.

The third distinction is between immediate symmetry and delayed symmetry. In the case of immediate symmetry, it is possible for the viewer to immediately see that the object is symmetrical. This is because the symmetry is in full view. This occurs when the viewer faces a symmetrical front of a house or sees a symmetrical design on the front of a sweater. In contrast, delayed symmetry occurs when the symmetry is not available for the viewer to see all at once. Often it is not possible to see both sides of an object at the same time. When delayed symmetry is involved, the two sides of the object are symmetrical images of each other. Examples include the two sides of faces, bodies, and most furniture and other objects. Most vehicles, such as cars, vans, and buses, are designed and decorated so that the right and left sides are mirror images of each other. Much clothing and many houses and buildings are also designed this way. Because one cannot see both the right side and the left side at the same time, it is impossible to recognize delayed symmetry unless one retains the image of one side in one's mind until one is able to see the opposite side. Given the large percentage of human objects that are designed so that the right side is symmetrical with the left side, humans must be well equipped to retain this image for an interval of time. One can see that the ability to retain this image provides advantages. One often views prey, predators, competitors, mates, and offspring from one side, rather than head on. It is important to be able to recognize the same species and individual when it is turned in the opposite direction, or when one is on the other side of it. One's ability to get and keep resources depends on correctly recognizing specific species and individuals no matter which way they are turned or viewed. Because humans have the ability to recognize delayed symmetry, they often apply delayed symmetry when they design and decorate their objects.

Centering

In centering, an object is placed at the middle of another object. It may be located at the exact middle. For example, a vase may be placed at the center point of a table or mantelpiece, and an overhead light or chandelier may be attached at the middle of the ceiling. On the other hand, an object may also be placed anywhere midway between the two sides of another object or structure, rather than dead center between all of the borders of the object or structure. Thus, on letterhead stationery the heading is normally placed equidistant from the two sides, but at the top of the page; a speaker's stand may be located at the center of the stage, but at the front of the stage; and a gravestone may be located halfway between the sides of the grave, but beyond the top of the coffin.

Many objects are centered. Phrases and single words are often centered on signs and doors. Titles of newspapers, magazines, books, chapters, and articles are normally centered. Belt buckles and buttons on shirts, sweaters, skirts, and dresses are usually centered.

> Before we left the house, my wife adjusted my belt so that the buckle was centered on my waist. #7033

Neckties are centered underneath the chin. License plates are centered on cars and trucks, designs are regularly centered on shirts, and subjects are centered in photographs. A mark of ashes is placed in the center of the forehead on Ash Wednesday. A tilak is centered on the forehead in India. Words are centered on birthday cakes and ornaments are centered on wedding cakes. In addition, people center themselves both behind and in front of a desk or service counter, and when they sit down at a dining table they sit in the middle of one side of the table (unless others are seated on the same side too).

As seen in Figure 10, it is less work for the brain to scan and categorize a thing that is centered (A) than one that is not (B).

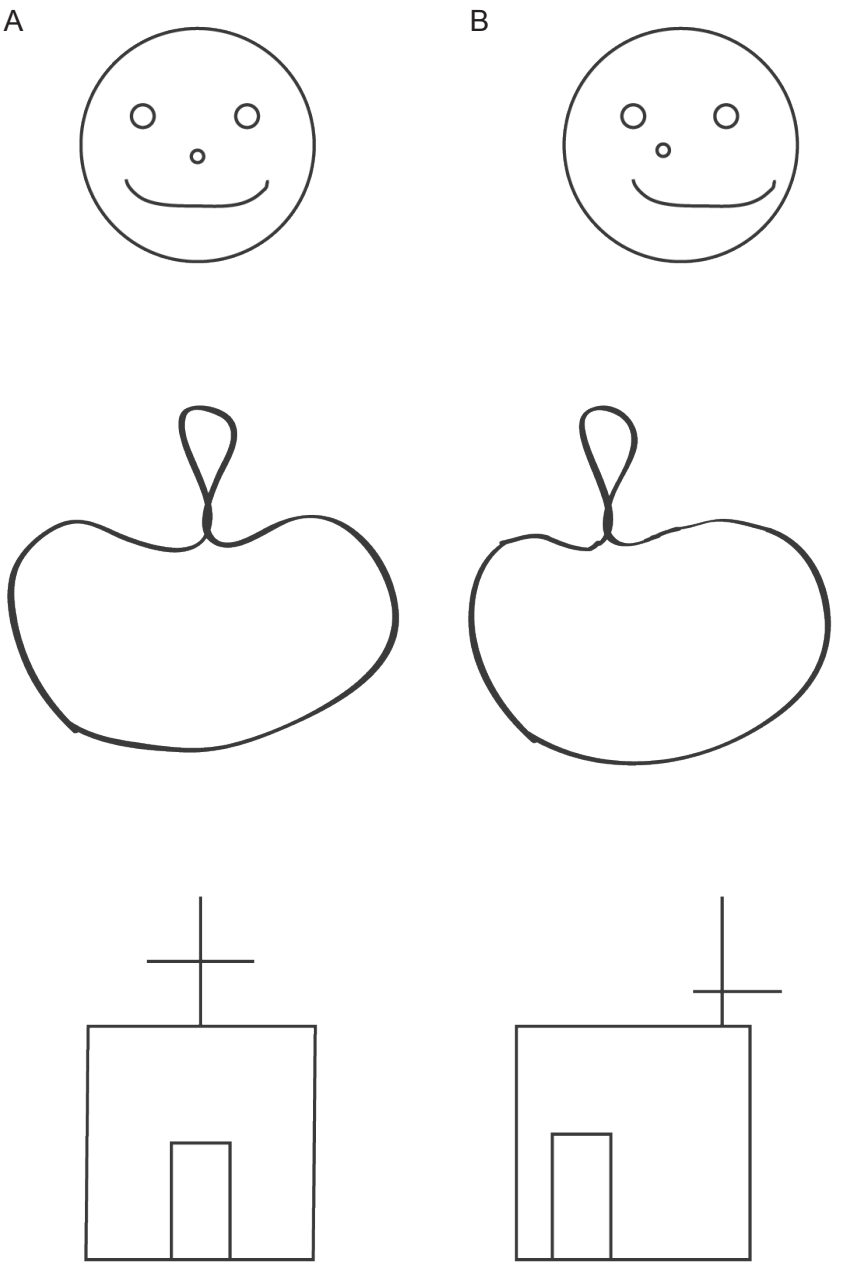


Figure 10: It is less work to scan and categorize things that are centered (A) than things that are not (B).

Repetition

Repetition is very common and consists of using multiple copies of an object, feature, or design within a specific area or on a specific object. One frequently sees a particular lighting fixture, door, chair, table, desk, or window used two or more times in an area. One commonly sees identical columns, arches, and arcades repeated in a house, building, or other structure. The same species of tree, bush, or flower is planted repeatedly in a yard or public garden. Personnel wear uniforms to provide an identical appearance. In fact, the word "uniform" implies similarity. Other examples of repetition include identical steps on a stairway, slats in window blinds, stripes on clothing, parallel folds in curtains, and vanes on radiators. Those who produce objects often use repetition in their designs in an attempt to make the objects appear more attractive. Decorative designs are also repeated on walls, wallpaper, tiles, quilts, rugs, plates, jewelry, manhole covers, hubcaps, cakes, and gift wrapping paper. Identical straight lines, rectangles, circles, and other shapes are often repeated in designs. When people talk and write they normally use a word to mean the same thing each time they use it. Otherwise they are likely to confuse their listeners and readers.

The brain uses repetition in order to establish categories. Therefore people employ repetition in order to enable the brain to establish categories.

As seen in Figure 11, it is less work for the brain to repeatedly use the same category (A) than it is to use different categories (B).

A

XXXXXXXXXXXXXXXXXXXXXXXXXX

B

XZKMQSAGPRNOIYUTEWLJHFDBVC

Figure 11: It is less work to scan and categorize the same category (A) than to scan and categorize different categories (B).

Often identical elements are organized in straight lines or circles. In structures such as houses, buildings, and fences, identical units of construction such as bricks, concrete blocks, boards, or posts are placed in long rows. Decorative features are also organized in straight lines or rows. The elements are normally of equal dimensions, and are placed equidistant from each other in a vertical or horizontal direction, often at right angles to other features. The designs on circular objects are usually repetitive, and the designs are placed parallel or perpendicular to the circular edge.

Repetition also occurs over time. Thus a particular church service may be repeated at the same hour each week, or a specific commercial may be aired many times on the radio or on television. Also, the same piece of music may be played every time a specific event occurs, such as a wedding or hockey game or at midnight on New Year's Eve. Or the same introduction may be used each time a specific radio or television program airs.

It is difficult to maintain a clear separation between repetition and consistency. One might define repetition as the use of identical items, and consistency as the use of similar items which are not identical. According to this distinction, larger and smaller versions of the same shape are examples of consistency, not repetition. Thus concentric circles, and progressively smaller rectangles nested within a molding, frame, or panel would be examples of consistency. On the other hand, the subdivision of a window into equal rectangular sections, or the creation of two or more identical panels side by side on a door, would be examples of repetition. The difficulty arises from the fact that when we look at repeated phenomena, we are normally a different distance from each copy we see. Each copy is usually closer to us or more distant from us than the next copy. Therefore when we look at repeated phenomena, each copy appears larger or smaller than the next. As a result we normally see repeated phenomena as consistent phenomena, not as repeated phenomena. However, one could take the position that when items are repetitive, or duplicate copies of each other, they are most consistent.

Equidistance

Equidistance refers to positioning three or more objects an equal distance from each other. One sees numerous instances of this. Examples include the location of buttons on shirts; stripes on dresses; eyelets in belts, shoes, and watchbands; rungs on the backs of chairs; stools along a dining counter; clumps of bristles in brushes; trees and bushes in a lawn; plants in a garden or field; posts in a fence; windows in a wall; words in a straight line of type; multiple lines of type on a page; rivets in a chest; holes in the tops of salt and pepper shakers; holes in water drains in water fountains and sinks; candles on a birthday cake; and holes in the top edge of a shower curtain for the rings that support it from the shower rod.

> When I hang my clothes in the closet, they often get bunched together. I really don't like seeing them this way. So I spread the hangers out and try to keep the same distance between them. #7034

As seen in Figure 12, it is less work for the brain to scan and categorize things that are equidistant (A) than things that are different distances from each other (B).

Equidistance is often applied together with repetition. Repetitive designs are normally placed equidistant from each other. This is the case with repetitive designs on wallpaper, tiles, jewelry, gift wrapping paper, and fabrics. Designs on circular objects are also often repetitive and equidistant from each other. This is commonly the case with designs on hubcaps, crowns, cakes, and the edges of plates. In addition, concentric circles are usually placed equidistant from each other.

Simplicity

People constantly seek to simplify the things they do and their understanding of the world they live in. They often try to see things in terms of correct versus incorrect, right versus wrong, good versus bad, and us versus them.

> Our department split into two factions and became embroiled in a war. There were a number of reasons for the conflict and these had developed

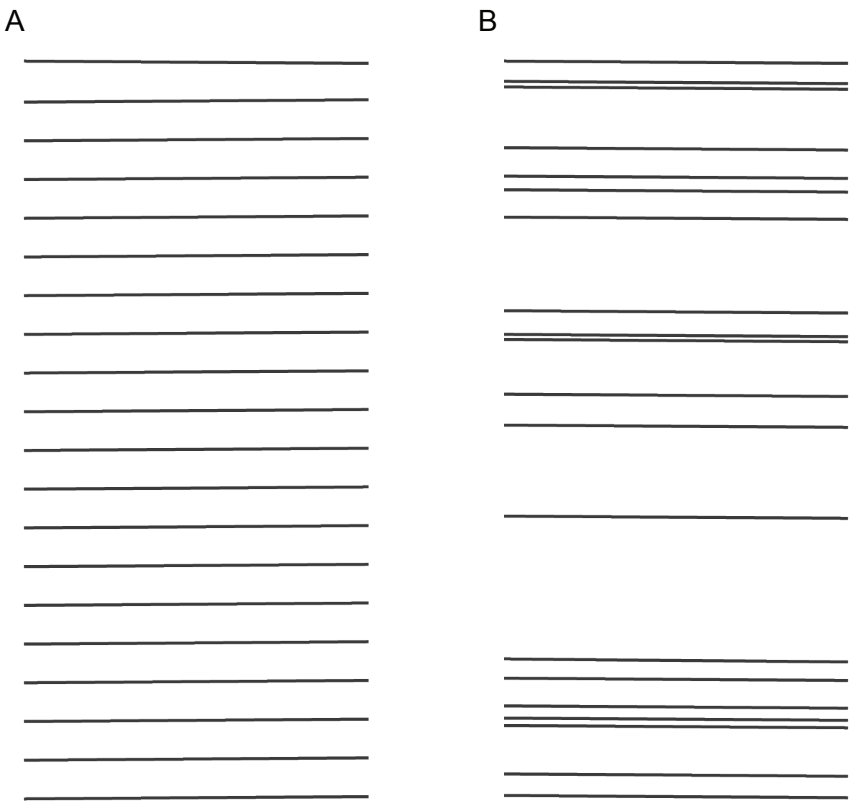


Figure 12: It is less work to scan and categorize things that are equidistant (A) than things that are not (B).

> over several years. Members of the two factions tried to explain this history to others outside the department, but others weren't interested in understanding the complexities of the problems. Outsiders simply reduced the conflict to good guys and bad guys, and sided with one faction or the other based on their prior feelings toward individual members of the department. #7035

People want to know which one approach is the right one and which one theory is the correct one. They attempt to find out which one employer, university, hospital, investment firm, doctor, lawyer, store, supplier, mechanic, electrician, plumber, roofer, and restaurant is the best. They recognize the single individual who is richest, fastest, strongest, achieves

the highest score, or invents, discovers, or explores something first. They are interested in which animal is biggest, fastest, slowest, most dangerous, or lives the longest; what place on earth is hottest, coldest, highest, or lowest; which building is tallest; and which movie costs the most to make. People seek to adopt a single approach for themselves, rather than several coexisting approaches. They also try to persuade others to adopt the same approach. They seek to implement one set of laws and one set of procedures in their organizations. There is also a constant effort to make products "easier" or "more user friendly" for people to use. Writers and speakers use simple words and sentences to communicate more easily with others. Science itself can be thought of as the search for the simplest way to accurately understand the world. Scientists search for models which are simpler and more inclusive in order to explain natural phenomena. At the same time scientific models have to compete with religious models, which are usually simpler than scientific models and easier to learn. It is much easier to adopt the explanation that "God did it" than to try to understand the origin of the universe or life in natural terms.

As seen in Figure 13, it is less work for the brain to scan and categorize simple things (A) than it is to scan and categorize complicated things (B).

Perfection

Perfection refers to the tendency to try to attain an ideal state, free of blemishes and defects. If people see something that is not in the desired state or condition, they often seek to correct it.

> I get my car washed about once a week, but it doesn't do much good. I had it washed this morning, but there's so much dirt on the roads, it already looks the same as it did before it was washed. #7036

> I find I can't stop trying to set things right. If I see a drawer that's slightly open, I shut it. If I see that the bottom edge of the fabric cover over my office equipment is slightly turned up, I turn it back down. This isn't because I'm worried about dust. It's because it just doesn't look right. #7037

> When I walk through my home, occasionally I see some dust on the floor. I always stop, bend down, scoop the dust up in my hands, and throw it in the nearest wastebasket. #7038

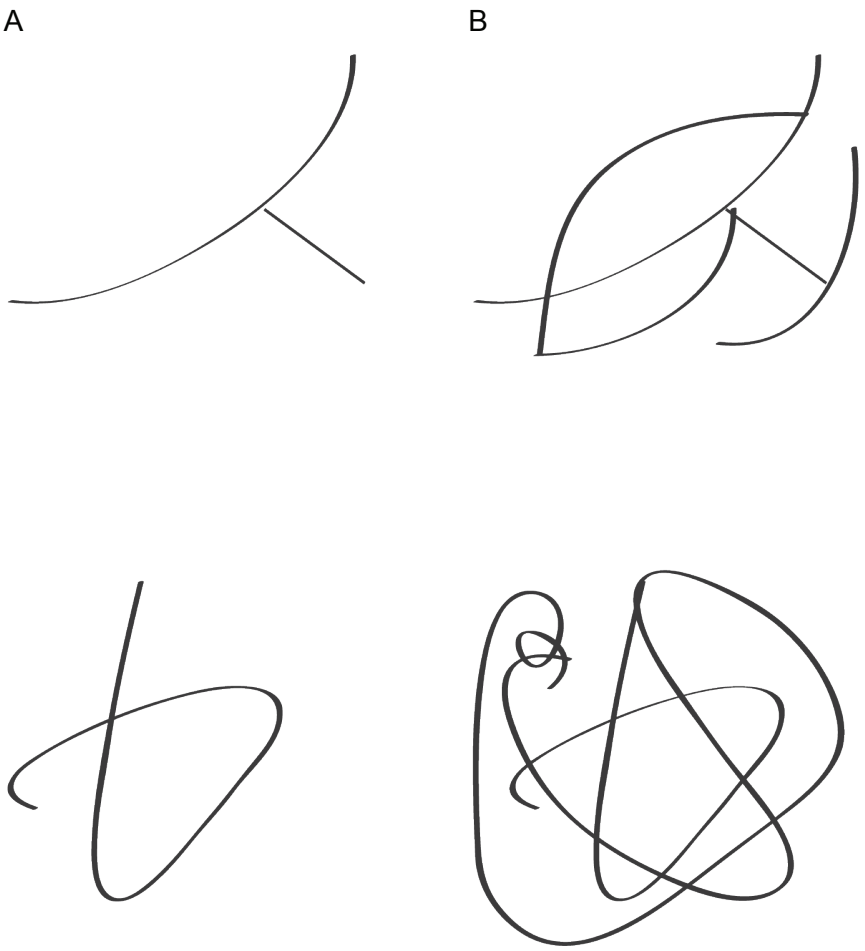


Figure 13: It is less work to scan and categorize simple things (A) than complicated things (B).

> It's really annoying to go in a bathroom and see someone hasn't flushed everything out of the toilet bowl. If there's anything other than water in it, I flush it before I use it. If I go in a public washroom and find the toilet bowl hasn't been flushed at all, I won't even bother flushing it. I'll look in another booth to try to find a toilet with a clean bowl. #7039

People commonly seek to achieve perfection in their endeavors. Often they will spend a great deal of time and effort to get something just right, and frequently redo it if they are not satisfied.

> If I type a letter or an envelope and find I've misspelled a word, I'll try to correct it. But if it's noticeable that I've made a correction, I'll get a fresh sheet of paper or envelope and type it again. #7040

> When I tie my necktie I want the front part to hang slightly longer than the back part, so the back part can't be seen. This isn't easy to do, and I never get it right the first time. I won't stop until I have it the way I want it, and sometimes I've had to tie it over again four or more times. #7041

> I designed this enamel broach to sell at the Christmas craft fair. I had to saw the blanks correctly, shape the silver wire just right, and fire the pieces at the proper heat just long enough to get the correct finish. Although I started off with ten or more blanks, I only ended up with three copies I considered good enough to sell. #7042

> It was Saturday afternoon during the last week of university classes, and I was in the building where most faculty offices are located. I saw the janitor locking all the outside doors, which are normally left open until midnight. When I asked why, he said he wanted to keep everyone out of the building so he could wax the floor. He didn't want anyone's footprints marring his work. #7043

People prefer things without any imperfections. Thus a person's appearance will be considered marred by a wart or mole; a tooth which is brown, crooked, or missing; or stretch marks on their skin. When shopping, people attempt to find cans, bags, cartons, and boxes without dents, folds, tears, marks, and scratches. People also commonly try to buy books, whether new or used, which are not marked and do not have pages which are torn, creased, or frayed. When there are several copies or containers of an item available, they often try to identify and purchase the one that is closest to perfect.

> I was at a sale of used books and overheard one woman tell another, "I hate when people bend down the corners of pages in a book." I well understand, because marking a page in a book by dog-earing it leaves a permanent crease and certainly mars the appearance of the page. #7044

I bought a frame for a photograph. When I got it home and removed the cellophane wrapper I found a scar on the surface of the frame. I tried to rub it off, but the scar just got bigger. So I walked all the way back to the store, picked out another frame, and arranged an exchange with the staff. There was nothing wrong with the first frame. It just didn't look good with the scar on it. #7045

I carefully tape all of the edges of my nonfiction paperback books before I read them. I use long lasting transparent tape which strengthens the edges and protects them from wear and tear. The book is so much more appealing to read and keep when it looks fresh and new. I did this with the book I'm currently reading, but then the book got caught in my kit bag and the cover and two front pages were wrinkled. I'm quite unhappy about it. I've tried to smooth the paper out, but it still has obvious creases in it. #7046

I collect stamps, and most collectors I know want to obtain the most perfect copies they can to put in their collection. They want copies that are perfectly centered, with no faded colors and all perforations completely intact. The stamp cannot be creased, torn, or have a bent perforation. Often they want a "mint unhinged" copy, which means the stamp has not gone through the mails, there is no cancellation marring the front, and the gum on the back is undisturbed. Collectors are always pleased when they can replace a stamp in their collection with another copy which is in slightly better shape. #7047

For Christmas my nine-year-old daughter got a new Cabbage Patch doll which could be taken into the shower. She named him Andy and treated him as a real person. About two months later she was bringing groceries in from the car and dropped Andy on the pavement. She struggled to hold on to all the bags and pick him up, but dropped him again. That evening I found her crying over Andy, claiming he was ruined. The doll had two very faint marks on his face where he had hit the pavement. I told her she was just helping me with the groceries so it wasn't her fault. She protested it was her fault for trying to carry so much, and cried all the harder. She was heartbroken and several of us tried to comfort her, but she kept saying, "He isn't smooth anymore." The next morning she had reconciled herself, and told me that even though he was no longer perfect, she still loved him. #7048

As seen in Figure 14, it is less work for the brain to scan and categorize perfect things (A) than it is to scan and categorize imperfect ones (B).

People realize that others prefer items in ideal condition. Thus when a hostess removes a portion of dessert from a pan or dish, and the portion breaks apart or falls over, she often keeps it for herself or gives it to another family member rather than to her guest.

> My wife fixes Sunday breakfast with two fried eggs for each of us. If the yolk of an egg breaks while she is getting it out of the frying pan, she always serves it to herself and gives me the eggs with unbroken yolks. Even though I tell her to give me a broken one, she will not do so. #7049

> I was in a restaurant the other day and asked to have a piece of apple pie heated. When the waitress brought it to me, the pie was only lukewarm. I asked her to heat it some more until it was hot, and she explained she didn't like to do so because it would spread out and flatten and wouldn't look like a proper triangular piece of pie. #7050

> I fixed some toast for a friend. When I had it ready, there were crumbs on the plate around the toast. I put the toast on a fresh plate that didn't have crumbs on it so the toast would look better. #7051

> I bought a fascinating chess set in Ecuador, which I wanted to give to someone. It was hand carved out of a very hard local nut. But when I got home and went to wrap it up, I noticed that a tiny knob on one of the 32 pieces was broken off and missing. I didn't know what to do. I didn't want to give the person a damaged gift, but the set was unique. I debated back and forth and finally gave it to him. #7052

People often reject items with imperfections. Thus they will get rid of a piece of clothing with a hole in it, a dish which is cracked or chipped, and a piece of wood with a knot in it, and not want to use a piece of paper with a slight crease or a discolored mark in the weave.

> I won't read books other people have read. I only read new books. I refuse to read used books and books from the library. This is because I hate to find a spot in a book. It's like finding a piece of eggshell in your breakfast. #7053

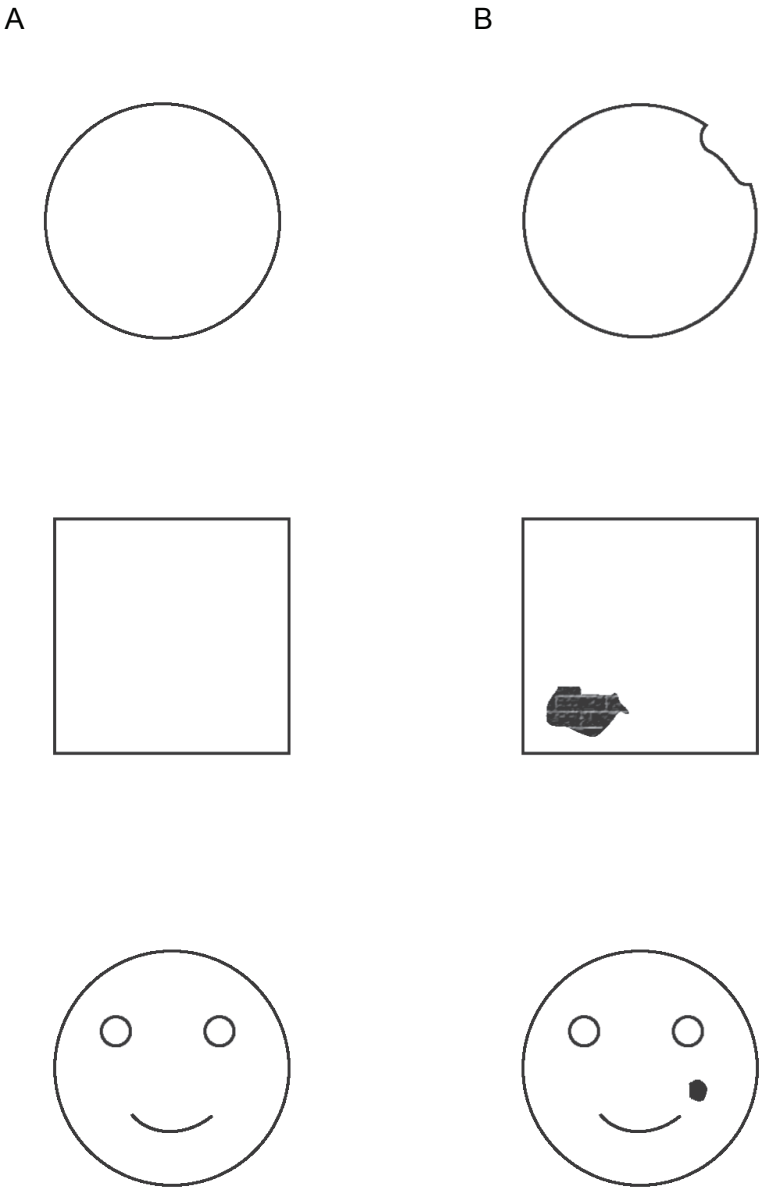


Figure 14: It is less work to scan and categorize perfect things (A) than imperfect things (B).

> When I go shopping I always try to buy the most perfect copy available. It shouldn't matter if there is a blemish on a greeting card or envelope. The blemish does not change the message on the card or the usefulness of the envelope. But I sort through all the copies available until I find one that just looks perfect. If a sweater has a flaw in the weave, I reject it, even though it would keep me just as warm as one without a flaw. If a cardboard box of cereal or facial tissue is dented, I don't want it. But this in no way affects the contents of the box. If I want to buy a book, I want one with no wrinkled pages, even though this doesn't change the information in the book. There are times I have gone without something I wanted to buy, just because the store did not have a perfect copy available. #7054

> When I received my latest version of computer software, there was a new plastic strip of headings to place on my keyboard. Unfortunately, the plastic strip I received had a bad crease in it, and the crease really annoys me. Others use the same system where I work, and I keep toying with the idea of taking someone else's strip when they aren't looking and putting mine on their keyboard. #7055

> My mom, who is Vietnamese, ordered a new clothes dryer. When they delivered it she pointed out that there was a dent in the front panel. The delivery men offered to subtract $50 from the cost of the dryer. She refused and said she wanted the dryer replaced. Later she told me, "We could use up $50 for a lunch at a restaurant. It's gone. But I'd have to look at this scar on the dryer the rest of my life." #7056

Items which acquire a small defect, such as a cup or vase with a nick in it, are considered less desirable and are often replaced. People frequently become upset when someone else causes an imperfection in something they own.

> I rented a house from someone in Charlottetown this summer and they were so particular about what I could and couldn't use while they were away. When the people returned home the woman complained that I had nicked one of her china cups. The cup was on the back of the shelf and I know I didn't touch it at all during the summer. #7057

> I just hate when someone damages a book of mine. I loaned a friend some books for learning French and the books came back looking frowzy, so I'm not going to loan her books in the future. Another friend visited my place with her adolescent children and one of them

> looked through an expensive book of photographs. The child was holding the book next to her stomach and the bottom of one page ripped when she turned it. I was quite annoyed. I didn't say anything, but I decided not to offer the child books to look at in the future. I'm learning from these experiences. I just bought a really nice oversize book with colored pictures of galaxies. If the pages aren't turned properly, they develop small creases very easily and the creases really destroy the sense of looking into space. I've decided I won't let anyone else look at the book unless I turn the pages for them. #7058

> One form of revenge or expression of envy is to take a key or other hard object and scratch the paint on another person's car or truck. This ruins the perfect appearance of the vehicle and is always noticed by the owner. #7058A

The presence of a defect often colors the appearance of the entire object or endeavor.

> When you go past a business and look at their sign and see a letter missing or a light bulb burned out, it makes a bad impression. It makes you feel that the owner just doesn't care, and that the business is going downhill fast. Often I'd rather take my business elsewhere. #7059

> I started reading a book on the brain and was really impressed with how well it was written. The author did a good job of organizing the information, explained things clearly, and presented very interesting examples. Then I hit a chapter with several typographical errors and several lines of type inserted into the wrong paragraph. Even though this may not have been the author's fault, these mistakes made me question the book as a whole. I'll always wonder just how careful the author was in putting his information together. #7060

People try to remove imperfections when possible. Thus they commonly seek to remove lint from clothes; spots on a window, mirror, counter top, piece of furniture, or floor; a hair on soap or in the bathtub; dandelions, trash, or dog turds from a lawn; weeds in a garden; a stain on a dish, glass, or eating utensil that has been washed; a particle of paper or food from a rug; a spelling error in a manuscript; a hair that was missed when they shaved; and a pimple on their face.

> If I see the bottom of my curtain turned up, or a wrinkle on my bedspread, it bothers me until I straighten it. #7061

> When I put a stamp on an envelope, I always tear off any excess borders or tiny pieces of neighboring stamps that are still attached to it. Also, when I tear open an envelope, pieces of the envelope stick out. If I decide to keep the envelope, I usually tear off these pieces so the envelope looks rectangular again. #7062

> If I put on a blouse or dress and see any wrinkles, I'll take it off and put on another one. I'll iron the wrinkled one later when I have time. #7063

> Every month I get my statement from the bank, and I make sure it balances with my checkbook. One month it was off by one cent, and I spent an hour going over my checkbook until I found where the mistake was. #7064

> When I go to urinate in a toilet bowl and see a tiny piece of shit stuck to the inside, I often try to hit it with a stream of pee to dislodge it. #7065

In Canadian society you rarely see people wearing clothes with stains, tears, holes, or missing buttons.

Thoroughness

People commonly seek to be thorough. They attempt to deal with everything that is covered by the category they are using. Thus they attempt to paint the entire room, vacuum all the rugs, empty all the wastebaskets, fold all of the clean towels, do all the tasks on their list, take a look at the entire shopping mall, consider the entire selection of winter coats in the store, see what all of the fast food restaurants in the food court of the mall are serving, look over the entire menu in a restaurant, cover an entire surface with decorations, discuss all of the phenomena within a topic, and check the spelling in their entire manuscript.

> It's hard to stop eating once you start on something. If I open a box of cookies or candy or a bag of potato chips, I keep at them until they're all gone, and this usually takes less than an hour. I sit there knocking them off without thinking about it. It's the same thing when you're no longer hungry and there's some food still on your plate or in the serving dish. Unless there's a huge amount, it's easier to just go ahead and finish eating it. #7066

Being thorough includes the inclination to finish an endeavor. For example, people will attempt to complete something they are currently doing, such as finish a book they are reading (even when they are no longer interested in it), or wash all the dinner dishes before they leave for a movie (even when they are in danger of being late).

> My wife and I began watching a humorous adventure film that was being broadcast over television. We missed the first part because the movie had already started when we turned to the channel it was playing on. Then we were so tired that we quit watching and went to bed about 40 minutes before the end of the film. But we wanted to know what happened in the film. So the next evening we went to the movie rental store, rented the film, and watched it in its entirety. #7067

Being thorough also refers to trying to get a complete set of objects, such as a copy of each postage stamp issued in Canada, every music recording produced by a favorite band, a full set of china dishes in a single pattern for serving eight or more people, or an entire series of books, such as all the mysteries written by Agatha Christie, Franklin Dixon, or Carolyn Keene, all the westerns written by Louis L'Amour, or all the horror stories written by Stephen King.

> I've been going in all the bookstores to find the books I didn't have in the Sweet Valley Twins series. I'm really pleased that I finally have every one they've published. When you have one, you want to have them all. #7068

> I've been trying for more than fifteen years to find volume ten in a science fiction series written by Ron Hubbard. I only need this one, because I have all the others in the series. #7069

As the next example illustrates, there is more than one way to complete an endeavor.

> I already have three complete sets of books for my little girl. Right now I'm trying to buy all the Beatrix Potter books for her. Every week or so I try to add another one. But I don't plan to buy her all the Dr. Seuss books, because I've already filled the rack they sent me to hold his books. #7070

Often people will make sacrifices, weather difficulties, and even take risks in order to be thorough.

> Because I want to get something decent for lunch at the campus café, like soup or an appealing sandwich, I have to get there between eleven thirty and twelve noon. After that there is little choice left, so I always leave my office before noon. But yesterday I was finishing a manuscript and typing in corrections. There was no rush to finish the manuscript; it was just more important to me to continue and finish than to get a decent lunch. So I didn't get over to the café until one o'clock, when there was very little choice left even of the unappealing stuff. #7071

> My daughter received a book of paper cutouts for Christmas. It contained pictures of Victorian cats, outfits for the cats to wear, and Victorian household items. My daughter began cutting out the pictures on Christmas day and worked on them well into January. As she cut them out she kept the outfits organized according to which cat they belonged with. She got real pleasure out of finishing each page, which was more important to her than playing with the outfits. She developed red marks and blisters on her hand from using the scissors so long, but she kept on whenever she could. Some evenings it was difficult to get her to go to bed because she was still working on her cutouts. #7072

> I was at home building a large wooden box when I had a stroke. I couldn't stand, and lay down on the floor. It was cold on the floor and I knew I shouldn't stay there. So I got up and drove to town. When I got to town I bought some more materials for the box I was making. Then I drove back home and finished building it. Afterwards, I went to get medical help. #7073

As seen in Figure 15, it is less work for the brain to scan and categorize things that are thorough or complete (A) than it is to scan and categorize things that are incomplete (B).

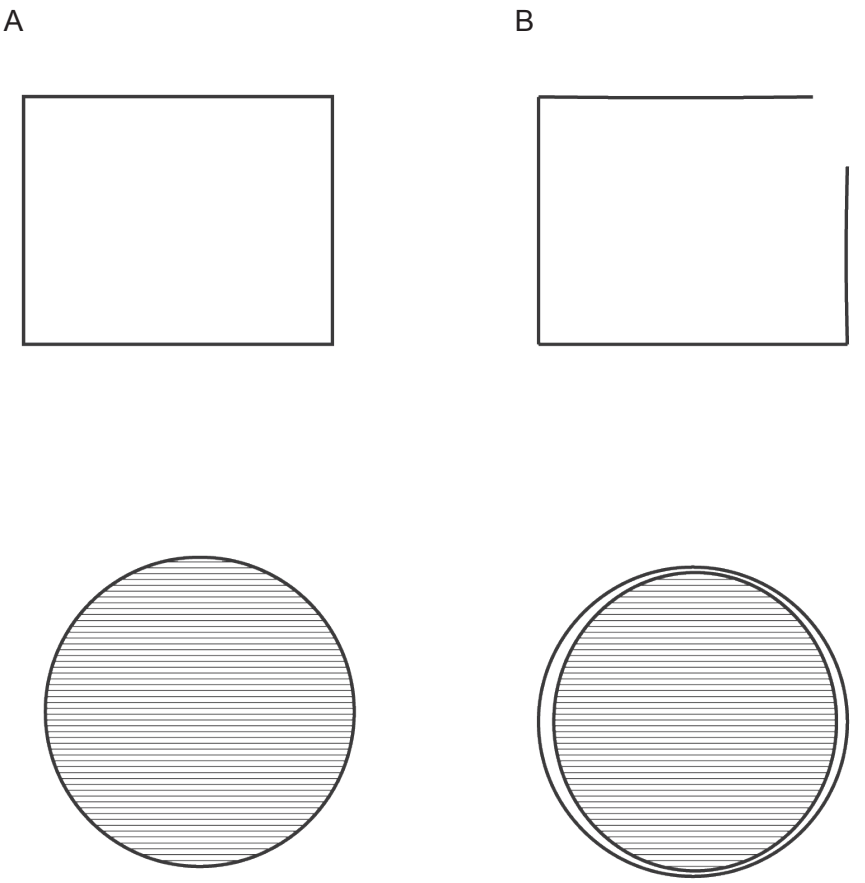


Figure 15. It is less work to scan and categorize things that are thorough or complete (A) than things that are not (B).

Consistency

Consistency is the use of a single theme or approach. Most man-made objects can be said to be consistent in construction. Typically an object appears consistent because very few materials, colors, textures, shapes, decorations, finishes, dimensions, and other variables are used in its design and construction. The less variation there is in these factors, the more consistent the object appears. This is enhanced by the fact a considerable amount of repetition is employed in the design of most objects, and the objects are often symmetrical or composed of symmetrical components. A sweater, for example, is normally constructed of the same material throughout. It is of uniform thickness, and the right and left halves are mirror images of each other. Frequently just one or two colors are used in the sweater. A single weave is usually employed for the body and sleeves, and a second weave for the borders at the neck, cuffs, and waist. A second example is provided by the typical hardcover book. The front and back covers of the book are identical in size and composition. The cover is a single color and the print on the spine is a second color. The inside pages of paper are identical in regard to size, color, and thickness. The straight lines of type are horizontal and of equal length. They are arranged precisely one above the other and are equidistant from each other. Each time a capital, regular letter, italic, heading, or subheading is used, its height, style, and color are always the same.

People use numerous approaches to produce consistency. A common one is to use multiple copies of a particular object, or repetition. Thus the uniforms of a sports team are identical in design and color, bricks or construction blocks used in building a house or wall are usually the same size and color, telephone poles and fence posts are of uniform height and diameter, and identical tables and chairs are normally used to furnish a library, restaurant, or business.

> This year the ballet teacher has arranged to have all of the costumes for the recital made by the same person. This is to avoid what happened last year when there was too much divergence. Instead of wearing a black leotard and pink tights, some of the young girls showed up in a bathing suit or a brown leotard. Also, a few mothers added lace and bows to the basic costume to make their daughters look extra nice. Some mothers even took their daughters to the

> beauty shop for a permanent beforehand. This year the ballet teacher instructed the mothers that each girl's hair is to be done in either one or two braids. #7074

> When I moved into my apartment house, I was told by the manager that all tenants were expected to use the outer layer of window curtains that were provided. These curtains were white and were to be hung next to the window. The manager explained that the rental company didn't want each apartment to look different from the outside. He did tell me I could use any color I chose for the second layer of curtains that faced the inside of the apartment. #7075

Repeated objects are consistent with each other because they share all of the same features. Repetition produces the greatest degree of consistency.

People also frequently seek to achieve consistency by selecting objects which share one or more features. For example, they may select a shower curtain because it is the identical color as their bath towels, or pillow cases which match their sheets, or a picture frame which is the same color as a dominant color in their print or painting. They may also use a single color theme, for example, a particular shade of white to paint the walls, doors, and shutters of their house.

> Whenever I can dress in perfectly matching colors, I do. I find just a few matching colors much more appealing to the eye than many incongruous ones. With a matching outfit I feel more comfortable with the way I present myself. So if I wear my dark blue slacks, I also wear my dark blue turtleneck and dark blue earrings. With this I wear a yellow pullover and a pair of matching yellow socks. #7076

> One year I decided that I wanted everything in my apartment to be white. Well this isn't something you can do overnight. Whenever you go shopping you have to keep on the lookout for things that are white that you find aesthetically pleasing. Often you find white things you don't like, or things you like that aren't white. White furniture, linens, and china aren't as hard to find as ordinary items. Ordinary things usually come in one or two colors, and rarely the one you want. I was really pleased when I found a white extension cord and a white plunger for the toilet. #7077

Similarly, people often obtain various items because they are identical in material or design. For example, they may acquire as many pieces

of furniture as they can which are constructed of pine, or wicker, or are Colonial or Victorian in style. They may buy several pieces of luggage at the same time so they can get a matching set in different sizes. They may also buy a set of china or knives, forks, and spoons in the same pattern, or use a matching paper, ribbon, and name tag when they wrap a gift. People also try to achieve consistency by employing a single subject matter, such as several pictures of birds or ships to decorate a wall.

> The different homerooms in my high school compete each year to see who can decorate their homeroom best for Christmas, and the winning room gets a free pizza party. In some of the rooms the students wrap empty boxes to look like presents and hang decorations and toys on the walls. But the best rooms decorate according to a single theme. In the computer room they put a different colored wrapping paper around each computer and big bow on it, so each computer looked like a large present. They also hung garlands up symmetrically around the room. Another room used the poem by Clement C. Moore for a theme. The poem starts in the following way:
>
> > Twas the night before Christmas, when all through the house,
> > Not a creature was stirring, not even a mouse;
> > The stockings were hung by the chimney with care,
> > In hopes that St. Nicholas soon would be there;
> > The children were nestled all snug in their beds,
> > While visions of sugar plums danced in their heads. . . .
>
> Their homeroom put up sheets to create different rooms in a house, made a fireplace and hung up stockings, laid out beds for the children, put pictures of sugar plums over the beds, and placed a picture of a mouse in the corner. They tied for first place. #7078

Another approach involves direction. Thus many people place eating and various kitchen utensils in a drawer in such a way that their handles are all at the same end, turn their clothes hangers so the hooks all face the same way in a closet, place wine bottles in a rack so the necks are all headed in the same direction, and put money in a cash drawer so the portraits on the bills all face the same way. People frequently manipulate things in a consistent fashion. Thus some mow their lawns, vacuum their rugs, or paint their walls so that the strokes are all

made in the same direction. Normally these strokes are made parallel or perpendicular to neighboring structures.

There are many ways in which people try to achieve greater consistency, depending on the kinds of objects they are dealing with.

> I have plastic containers which hold ten cassette tapes each. You can see the backs of the tapes when they are in the container. I wanted to put labels on the backs so they would form a neat line. When I attached the labels to the tapes, I tried to make sure they would all be the same height. But I couldn't put them on evenly, and what you see is a crooked line. I wish I'd done a better job. It doesn't look very good. #7079

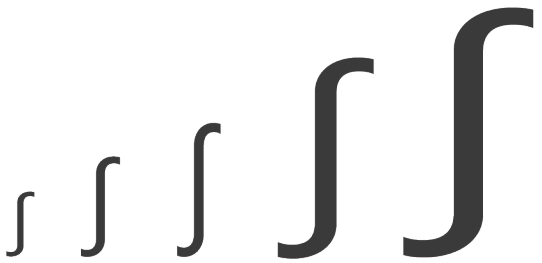
> I entered the department office to use the photocopier. The first thing I did was check the open cubicle where my mail is deposited. However, when I did so I noticed someone had placed a one page flyer in someone else's mailbox. Flyers are commonly left in our mailboxes. However, instead of lying flat in the bottom of the mailbox, this flyer was curved and angled around the inside and back of the mailbox. At first, while I used the photocopier I tried to ignore the flyer, but it continued to annoy me. Also, I knew very well it would look bad if someone else saw me handle items in another person's mailbox. Finally, I pulled the flyer out of the mailbox and placed it back in neatly, flat on the bottom of the box. This way it no longer annoyed me as I continued to use the photocopier. #7080

> When I fill the sugar dish, I break up any lumps I find. The lumps just don't look right. It's better if all you see are grains of sugar the same size. #7081

As seen in Figure 16, it is less work for the brain to scan and categorize things that are consistent (A) than it is to scan and categorize things that are inconsistent (B).

There are a multitude of ways in which people seek to achieve consistency which have little to do with material objects. Thus a teacher can employ a single set of criteria when assigning grades in a course, and then argue that she cannot make an exception for a specific student because she would have to be consistent and apply the exception to everyone in the class. A student may make a spelling error and repeatedly write "mean't" for "meant," which he assumes to be consistent

A



B



Figure 16. It is less work to scan and categorize things that are consistent or more consistent (A) than things that are inconsistent or less consistent (B).

with "can't" and "don't," while the teacher corrects him because it is not consistent with accepted practice.

> I am editing an academic book and the contributors come from North America, England, and Australia. The publisher is in the United States and wants all the spelling and punctuation to be consistent with American usage. I find it a chore to make the changes in the text for authors from Canada, England, and Australia. The "u" has to be removed from words like harbour, labour, neighbour, and honour. Also, words like defence and fantasise have to be changed to defense and fantasize. I also have to alter quotation marks from single to double and double to single,

because different countries have different conventions. However, when it comes to bibliographic references, it isn't necessary to make changes. If the original title of the book uses the spelling "labour," then changing it would create confusion. #7081A

People try to achieve greater consistency in what they say and write in order that they can communicate more effectively. Thus instead of writing, "Eating habits seem to decline, lack of energy, and remaining indoors are factors she must deal with during winter," they will write, "Loss of appetite, lack of energy, and remaining indoors are factors she must deal with during winter." Instead of saying, "I love listening to music, walking on the beach, and when someone brings over animated films," they will say, "I love listening to music, walking on the beach, and watching animated films with someone." Instead of saying, "I like to walk, hiking, when I get presents, and wishes of anything I want," they will say, "I like to walk, hike, get presents, and have my wishes fulfilled." And instead of writing, "I interviewed five different people who are not related, do not know each other, and each person's behavior differs," they will write, "I interviewed five people who are not related, do not know each other, and behave differently." The more consistent they are, the easier it is for others to understand them. #7082

Individuals seek to keep their actions consistent with what they say, so they will not be thought to be liars or hypocrites. Also, organizations frequently try to design policies which they can apply consistently to all their employees. Such policies may deal with working hours, a dress code, requirements for getting promoted, and procedures for taking holidays.

After a protracted war between two factions in our department, we were able to reach a healthy balance of power by letting each faction have the position of chair for only one year at a time. It's really working well, the factions are starting to break down, and our department is in the healthiest state it's been in during the past decade. Despite this, the dean is unhappy because our procedure differs from that of all the other departments, which elect a chair for three years at a time. He constantly brings up reasons why our department should adopt the standard approach. His need for consistency is more important to him than the health of our department. #7083

People go to considerable trouble to establish and maintain consistency. Thus they may a) explore a number of shops looking for an item of clothing, such as a purse or pair of shoes, which matches the color of the clothes they already have, b) repeatedly try to achieve a proper mixture of paint that will be identical to the color last used, and c) work for months or years in an attempt to fit observations and interpretations into a single theoretical framework.

> My teaching assistant maintained my grade book for me this last semester and printed all the entries neatly. Toward the end of the semester I wanted to add a couple of grades for assignments which came in late. However, I waited until I could give my assistant the grade book so she could do it herself. I didn't want to disturb the uniform appearance of her entries with my own handwriting, and take the chance of annoying her. Then when I handed her the grade book, she ran upstairs to her office to get her pen with blue ink, because that's the color she'd been using in the grade book all semester. I offered her one of my pens with black ink, but she didn't want to use it. Neither of us considers the appearance of the grade book very important; it's just the desire to maintain a consistent appearance. #7084

People frequently notice inconsistency, and often act to remove it.

> When I was getting dressed this morning, I noticed that one of the drawers in my bedroom cabinet was slightly open. I pushed it shut so it matched the other drawers. #7085

> We have a set of white chairs around our dinner table. When a friend of ours comes to eat he likes to sit in a different type of chair and we get it for him. As soon as he leaves I take away the chair that doesn't match and put it out of sight. #7086

Inconsistency distracts us and makes it more difficult to concentrate on what we want and to carry out tasks.

People also reject items and endeavors because they are not sufficiently consistent.

> I work at a bookstore. We frequently get people looking for books they are missing in a set. Some sets consist of only a few volumes, but others have as many as seven volumes in them, like the Narnia series by C. S. Lewis. Then there are sets for youth with 50 or more

volumes in them, such as the Hardy Boys and Nancy Drew mysteries. However, when people find a book they are missing in their set, they frequently decide not to buy it, because it does not perfectly match the other volumes they already have. Often our store has a later printing with a different cover or in a different size than the volumes they already own. In some cases the books we have are better than those they have. Our books may be illustrated or have book covers that are more durable. But this doesn't seem to matter, because people still reject them. It is clear that having a perfectly matched set is more important than reading the book or getting a better copy. #7087

I was at a pottery studio and saw a marvelous chowder tureen with six bowls. The set was beautifully shaped and colored and the design was quite original. But I would never buy a set of pottery dishes, because they are done by hand, and just aren't uniform. I could see differences between the individual chowder bowls, such as slight changes in shape and small bumps in some that weren't in others. No two were exactly alike. #7088

Horror movies and Halloween costumes often use inconsistency to make a character appear repugnant. This may be achieved with asymmetrical facial features, crooked or black teeth, and moles. #7089

Grouping on the basis of similarity

People commonly organize materials on the basis of degree of similarity. There are numerous examples of this. Thus in households different closets, cabinets, and drawers are used for different types of objects. For example, many people put socks, underwear, shirts, and sweaters into separate drawers or on separate shelves.

When I put away the clean dishes from the dishwasher, I notice when similar dishes are not stacked together. It bothers me, and I frequently take time to reorganize them. For example, we have two styles of soup plates and when they are intermixed I sort them out so all of the same style are stacked together. #7090

I keep my dirty clothes in the utility closet, where I have several different laundry bags. One bag is for white underwear; another for towels and sheets; a third for dark objects, such as socks and jeans; and a fourth for dress shirts. I wash the clothes in each bag separately. #7091

One frequently sees people organize a) books on shelves by subject matter, author, and size, b) dishes by function, design, shape, and size when they are stored in cabinets and when they are gathered for washing, c) papers and printed materials by subject matter when they are stored within file folders in a file cabinet, d) related information into paragraphs, sections, and chapters for others to read, and e) lectures by topic, time period, and geographical area. Flower gardens and vegetable gardens are normally separated from each other, and rows and sections within each garden are dedicated to specific plants. Stores which specialize in groceries, drugs, hardware, clothes, books, and hobby materials all organize their merchandise into many distinct categories on the basis of function, size, and brand. Restaurants often organize separate seating areas, such as rows of booths, tables for two, and tables for four. Catalogs and menus are generally organized into categories and subcategories on the basis of type, size, and/or brand.

> When I'm in a store waiting to pay at the checkout counter, I often fish all of the coins out of my pocket and separate the dollars, quarters, dimes, nickels, and pennies. This makes it a lot easier and faster to give the cashier the correct change. #7092

People and stores acquire numerous devices to help them group items together on the basis of similarity. A few examples are key rings, paper clips, staplers, file folders, file cabinets, coin holders, cash drawer trays, stands for movies and music recordings, bookcases, tool chests, spice racks, medicine cabinets, and display shelves.

> When I take notes in class I use a blue pen for headings, a red one to underline the headings, a black one for the actual notes, and a pencil for any graphs or pictures. #7093

As one acquires a larger number of objects of a specific type, one normally increases the extent of one's organization. Often one does so well after it becomes clear that one is spending too much time and energy searching for specific items through disorganized materials, such as a crowded drawer or a pile of papers.

> Every day after my classes are through, I go and put the handouts from class into different folders. By filing these notes and other stuff

> in the folders, I know exactly where to look for old assignments and such. And I don't have to root (rummage) through drawers and scribblers (notebooks) for some damn thing I lost long ago. #7094

Usually one subdivides the objects into additional categories on the basis of some common feature. Thus people will put their eating utensils into a separate drawer and also use compartments or a special tray within the drawer to separate knives, dinner forks, salad forks, teaspoons, soup spoons, and so on.

> I keep the clothes in my closet separated by type and color. I do this with my T-shirts, blouses, pants, dresses, and sweaters. I place my belts, jewelry, bras, and scarves in separate baskets. #7095

> I've always separated my clothes in my closet. Thus I hang up my neckties together, my belts together, my dress pants separate from my jeans, and my sport coats separate from my dress shirts. I used to have just a few dress shirts, and I hung them together in the closet. I had so few I didn't really care in what order I hung them up. But then I found a brand which really fit well, and I bought about 25 new dress shirts over a three-year period. These are all identical except for color. Even though I still put all my dress shirts together in the closet, I now carefully hang all the white ones together, all the blue ones together, and all the yellow ones together. #7096

As seen in Figure 17, it is less work for the brain to scan and categorize things that are grouped on the basis of similarity (A) than it is to scan and categorize a variety of things that are mixed together (B).

Multiple orientations

Several orientations are usually employed at the same time in the construction and placement of objects, and in other endeavors. Thus window curtains are usually rectangular in shape, hang perpendicular to the floor, are hemmed parallel to the edges of the material, have parallel folds, are repetitive in regard to pleats and folds, are usually consistent in the sense that they are a single color and material, and are often hung on both sides (right and left) of a window to present a symmetrical appearance. In military drills and parades, personnel and equipment are arranged in rectangles, are equidistant from each other in parallel rows

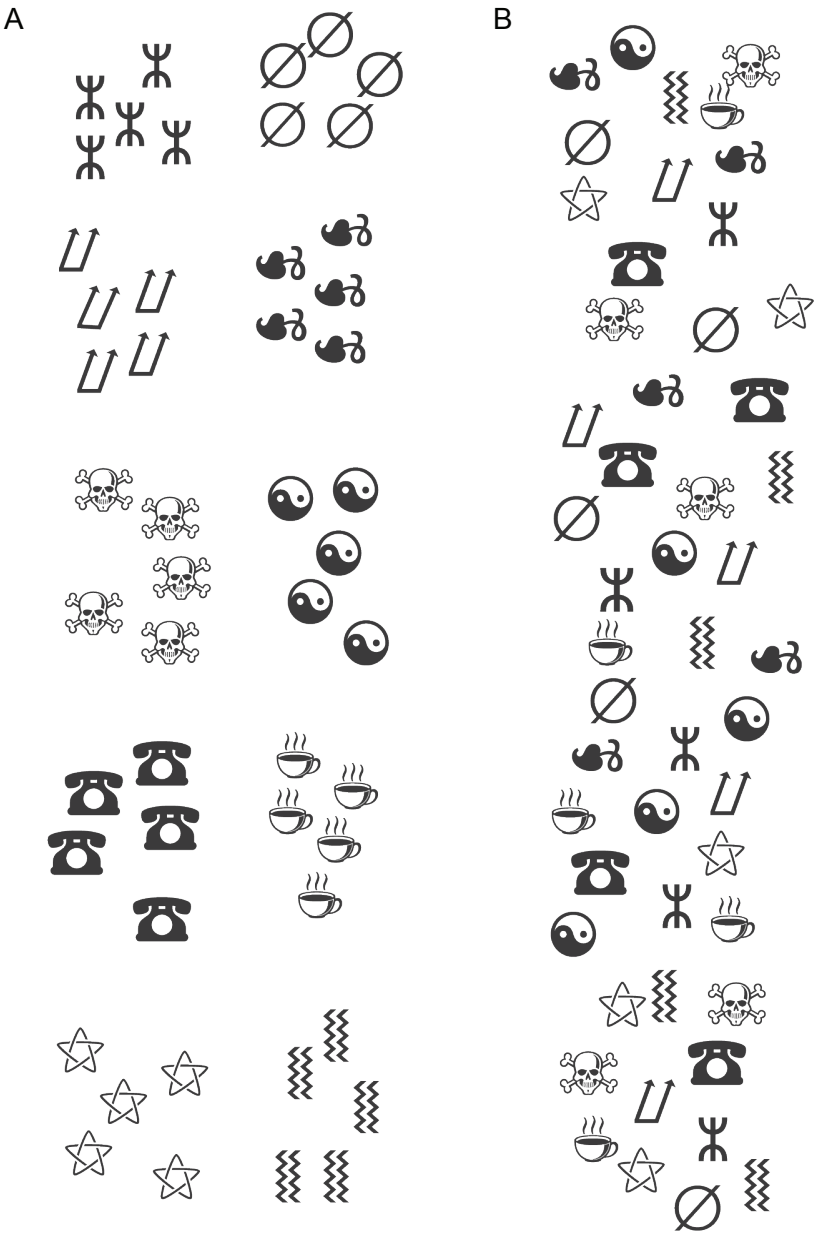


Figure 17. It is less work to scan and categorize things that are grouped together on the basis of similarity (A) than things that are mixed together (B).

and columns, are clothed and decorated in the same colors and designs, wear symmetrical uniforms, attempt to move in perfect unison, and turn at right angles. When makeup is applied to improve one's facial appearance, a concealer is used to cover and hide spots and blemishes, a foundation creates a consistent and even appearance, cosmetics are applied equally to both sides of the face to produce a symmetrical appearance, and care is taken not to stretch the skin around the eyes and produce wrinkles. Scientists group phenomena on the basis of similarity, construct models which are consistent with observations, adopt the simplest model, and seek to explain all phenomena.

Common objects are usually composed of multiple orientations. The typical automobile a) is externally symmetrical when seen from the front, back, or two sides, b) is predominantly a single color, c) has a different color, such as chrome or black, to distinguish door handles, bumpers, grill designs, and a horizontal protective strip on the sides, d) has the license plate and logo centered, e) has horizontal, vertical, parallel, and perpendicular straight lines in the design of grills, vents, and upholstery, f) has rectangular designs for the radiator grills and lights, g) has the door handles in a horizontal line, h) has gauges in circles, squares, or rectangles, i) has rectangles which encompass different sections of dashboard controls and gauges, j) has a circular or square (with rounded corners) opening in the body for gasoline, k) has hubcap designs which are repetitive and equidistant, and l) is frequently decorated with additional horizontal lines which are painted on the body or designed into the bumpers. The typical clothing outfit is symmetrical when viewed from either the front or back. It is fastened by buttons which are centered, arranged in a vertical line, and equidistant from each other, or it is fastened by a centered vertical zipper. It is hemmed parallel or perpendicular with the ground. When clothing items are used for two matching body parts, such as both arms, ears, hands, legs, or feet, the items are mirror images of each other, which provide a symmetrical appearance. The outfit is composed of one or more articles of clothing which are a) a solid color, b) a solid color with a centered, symmetrical design, c) a solid color decorated with repetitive horizontal or vertical straight lines or stripes in a second color which are equidistant from each other over the entire item, or d) a repetitive pattern in which similar designs are equidistant from each other over the entire item. The typical house or building a) is parallel and perpendicular to the street,

b) has a predominantly solid color on the outside, c) is constructed in a horizontal, vertical, parallel, and perpendicular fashion, d) is in the shape of one or more rectangles, e) consists of rectangular rooms with rectangular doors and windows, f) is composed of identical, repetitive, rectangular components, such as bricks, blocks, or boards, which are arranged equidistant from each other, g) has symmetrical features which are often repetitive and are usually arranged in an overall symmetrical pattern, h) is decorated by additional rectangles, such as nonfunctional shutters, paneled doors, one or more frames around doors and windows, and sectioned windows, i) is filled with rectangular and circular furniture, which are arranged in a parallel and perpendicular fashion, and j) is surrounded by a rectangular lawn, which is a consistent height and composition, and usually decorated by identical plants equidistant from each other, which are arranged in straight lines parallel and perpendicular to the house, building, or street. The typical object of human construction a) has a single predominant color, b) is symmetrical, c) is rectangular or circular, d) is composed of identical components, e) has features which are centered and arranged equidistant from each other in horizontal or vertical straight lines, f) is decorated by additional straight lines or rectangles which are parallel and perpendicular to the edges of the object, g) is placed together with identical objects, and h) is arranged parallel and perpendicular to other kinds of objects.

The application of orientations

When people lack categories to deal with phenomena, they experience tension. When they succeed in forming categories which can deal with the phenomena, this tension is released, and the release of tension is experienced as pleasure. The formation of categories to deal with unfamiliar phenomena is an important source of pleasure for people. This is the underlying reason why people engage in the arts. A great deal of human effort is devoted to creating and consuming the arts, including music, literature, film, photography, painting, and design. All of the arts exist because a) they provide people with unfamiliar phenomena, and

therefore tension, and b) when people categorize the unfamiliar phenomena, they release this tension and receive pleasure. Use of the orientations enables those creating the arts to structure unfamiliar phenomena in such a way that consumers of the arts can easily categorize the unfamiliar phenomena and easily experience pleasure from them. The arts give us new phenomena to categorize, and the orientations help us categorize these phenomena.

Orientations are applied in all areas of human activity. When we examine various forms of human activity, we see just how pervasive the use of orientations is. We will focus on a few human activities under the following topics:

- Architecture
- Decoration
  - Interior design
  - Christmas decorations
- Poetry
- Music
- Photography
- Dance
- Gardening

Architecture

The architecture of buildings, houses, and other structures is usually rectangular and sometimes circular. Each rectangle is horizontal or vertical and therefore symmetrical. Other shapes are used less often. When some other shape is used, it is almost always designed to be symmetrical. For example, when a triangle is used, the two lower corners are on a horizontal line and have equal angles. External and internal architectural features are generally parallel and perpendicular, horizontal and vertical, repetitive and equidistant, aligned, and/or centered. Consistency may be produced through the use of identical or similar features. Half circles are sometimes added to the ends of rectangles and quarter circles to the corners of rectangles. Surfaces are commonly a single color. Additional rectangles and straight lines are frequently added to surfaces by means of the application of different materials and colors. Sets of features, such as windows, are commonly

arranged in a row to give the appearance of a straight line or stripe. Architectural components are normally symmetrical and repetitive, and the overall appearance of a structure is often symmetrical. The components of structures, such as bricks and boards are usually identical in size and color. Their edges are often emphasized to give the appearance of multiple rectangles or parallel straight lines. Surfaces may be decorated, usually with repetitive or symmetrical designs. A decorated rectangle, stripe, or circle, is still a rectangle, stripe, or circle.

An enormous amount of variation is used to produce unfamiliar structures that people can categorize and thereby experience pleasure from. These are unfamiliar shapes, sizes, placements, and combinations of walls, façades, windows, doors, rooms, halls, fireplaces, porches, plazas, moldings, shutters, roofs, and fences. Because they are unfamiliar, they produce tension, people notice them, and as people categorize them, they experience pleasure from them. Because the innovations are usually constructed in terms of orientations, they are easily categorized and quickly produce pleasure. Often innovations are constructed in accordance with currently popular forms, because these are more familiar and are easier for people to categorize. As a result there are styles and schools of architecture. Once the innovations have been fully categorized, they no longer generate tension, there is no tension remaining to be released, and people no longer experience pleasure from them. Subsequently people do not notice them and take them for granted.

Decoration

Decoration is commonly applied to buildings, rooms, furniture, household items, gardens, vehicles, clothing, money, toys, books, paper, and desserts. Decorations often consist of rectangles, circles, and straight lines. However, numerous other designs are also used. Decorations are commonly repetitive, centered, and/or symmetrical. They may be aligned on a diagonal in order to draw more attention.

Most items are a solid color or have a single color underlying a decorative design. Designs on wallpaper, upholstery, towels, shower curtains, and sheets are normally repetitive and equidistant. Straight lines and stripes are frequently used for decoration, and these are

placed horizontally or vertically and equidistant from each other. Designs on circular objects such as dishes, hubcaps, and manhole covers are usually repetitive, equidistant, and concentric. A symmetrical design is frequently used on clothes, and this is commonly placed in the center of the chest or back. Interesting and varied designs are created by diagonal rows of repeated, equidistant smaller designs. Often there will be one to three different shapes in each row, and one to three different rows, before the entire sequence is repeated again. Thus if we number the rows 1, 2, or 3, and the smaller designs A, B, C, D, E, F, G, H, the pattern may proceed as follows: 1: A, B, C, A, B, C, etc.; 2: D, E, D, E, etc.; and 3: F, G, H, F, G, H, etc.; and then repeat the entire sequence again in rows 4, 5, and 6, and so forth. One sees such designs on clothing and wallpaper. Architecture commonly uses straight lines and rectangles in its decorative designs. A design is usually highly consistent, and employs a single theme, a limited number of colors, and similar shapes. Designs also have clearly defined edges so that they can be easily seen.

Interior design

Often in interior decorating there is a specific theme, or style, such as Victorian, Colonial, Scandinavian, open architecture, all white, or oak, which is consistently applied. Frequently the dining room, living room, or patio furniture is in matching sets and specific materials and styles are repeated. Rooms, doors, walls, picture frames, cabinets, drawers, windows, tables, desks, towels, sheets, beds, computers, televisions, electrical appliances, bookshelves, fireplaces, mirrors, steps, and panels on doors and in window frames are usually rectangular. This is also true of kitchen appliances, including refrigerators, stoves, dish washers, and microwave ovens. Dishes, glasses, mugs, pots and pans, bowls, and vases are usually circular. Clothes washers and dryers are rectangular and have circular or rectangular doors. Normally the straight lines in wooden and laminated floors run parallel and perpendicular to the walls. Rugs and bath mats are rectangular or circular. There are repetitive designs on tiles, linoleum, wallpaper, bedspreads, shower curtains, and rugs. All of the doors and all of the ceilings are normally the same height.

Christmas decorations

The celebration of Christmas involves many uses of orientations. A Christmas tree is selected which presents a symmetrical appearance. The very top of the tree should be vertical, and not angled to one side. The tree should be consistent in the sense that its branches are evenly distributed, with ample green needles which hide the internal brown branches. The tree is often turned so that its most perfect side is exposed to viewers. Christmas decorations and tinsel are placed evenly, or equidistant, around the portion of the tree that is seen, in order to maintain consistency. Spherical ornaments are commonly used for decorating the tree, and appear circular from all directions. A star or angel is centered on top of the tree, and considerable effort is made to make sure this ornament remains vertical. Strings of Christmas lights are commonly used on the tree and inside and outside the house. The light bulbs are the same size, are placed equidistant from each other, and may be in very few colors in order to provide greater consistency. The strings of lights are frequently hung symmetrically both indoors and outdoors. Broken ornaments are not used, and burned out Christmas light bulbs are replaced, because they are imperfect and inconsistent. The more repetition and consistency, the more elegant and pleasing the decorations.

Presents are commonly placed in a rectangular box which is decorated with wrapping paper, a ribbon and/or bow, and a name tag. The wrapping paper normally consists of a single background color covered with repetitive designs placed equidistant from each other. The background does not interfere with viewing the designs, and the designs follow a consistent theme. People use a rectangular piece of wrapping paper, regardless of the shape of the present they are wrapping. The wrapping paper is decorated on one side only. The entire present must be covered with the same wrapping paper in order to appear consistent. The paper is carefully folded around the box so that it provides flat horizontal and vertical surfaces without bumps and wrinkles. The paper must also be positioned so that no pieces of the underlying box are seen. The viewer sees only the decorated side of the wrapping paper, and as a result the appearance of the present is

consistent. One attempts to make the folds in the wrapping paper in the same way at the opposite ends of the present in order to maintain a symmetrical appearance. When pieces of tape are applied to fasten the wrapping paper together, the tape is frequently aligned to be parallel or perpendicular with the edges of the paper or the box. Often transparent tape is used to avoid inconsistency with the color and design on the wrapping paper. When holes and rips in the wrapping paper are discovered they may be repaired or hidden because they are considered imperfections, or else the present may be rewrapped with a fresh piece of paper. Ribbons are normally tied horizontally and vertically on the box. As a result the ribbons provide horizontal and vertical stripes on the present. The bow is usually circular or symmetrical and commonly placed in the center on the top of the present. Manufactured bows are preferred because they involve less effort and are more perfect than those one can tie oneself. When a name tag is fastened to the present, it is often aligned so that its edges are parallel with the edges of the box. Various alternative positions may be used for the bow and tag. For example, one may place the bow and name tag at opposite sides of the present, to give it a balanced or more symmetrical appearance. Wrapping paper may be adjusted or refolded, ribbons may be tied again, and tags may be realigned to achieve a more perfect appearance. People attempt to make sure the colors and designs of the wrapping paper, ribbon, bow, and tag are consistent or complementary and pleasing. When presents are opened, the wrapping paper is torn and bent and usually discarded because it is no longer perfect. Manufactured bows, which can be costly, may be unstuck from the wrapping paper and saved to be used on family presents in the future. Because the adhesive strip underneath the bow shows signs of use, such bows no longer appear new and perfect and are less likely to be used in the future on presents for non-family members.

Santa’s clothing is in contrasting red and white which attracts attention. His jacket, pants, and cap are a solid red color. The broad bands of white which are used for his belt, cap band, wrist cuffs, and boot tops provide horizontal stripes, while the white strip down the front of his jacket provides a centered, vertical stripe.

Poetry

Similar to prose, poetry communicates a message, feeling, or story. The listener categorizes this information. Poems are often constructed from simple words and phrases, rather than out of long complicated words and sentences, to make them easier to categorize. Poetry seeks to provide unfamiliar combinations of words and images for the listener or reader to categorize. If the information is already familiar, the listener does not find this interesting.

At the same time poetry uses repetition to create additional categories in the minds of the listeners or readers. Humans use repetition to form categories. In poetry, the sounds, the words, the phrases, the sentences, the number of syllables in a line, the number of lines in a verse, and entire verses may be repeated. This repetition occurs in conjunction with the content of the poem, and provides the reader or listener with additional categories over and beyond the subject matter, or meaning, of the poem. Poetry is enriched prose. Because poetry employs more repetition than prose, poetry is easier to memorize than prose.

Let us consider the following poem:

What's the matter?

What's the matter? Are you fatter?
Did someone rain on your parade?
Why so glum? Why no chatter?
Did you get a failing grade?
Are you sad? Are you mad?
Did I do something very bad?

Don't sit and mope, like a dope.
Have a cry, eat a sweet,
Pick your nose, scratch your feet.
You silly, silly piece of meat.

Just get on with it.

There are many forms of repetition used in this poem. Many words rhyme, which means they include identical sounds. Examples include "matter, fatter, chatter," "so, no," "parade, grade," "sad, mad, bad," "mope, dope," and "sweet, feet, meat." Also words are repeated, such as "Why, Why," "Are you, Are you, Are you," "Did, Did, Did," "you, you, you, you," "your, your, your," and "silly, silly." Often the number of syllables is repeated in two portions of a line. Examples are "What's the matter? Are you fatter?" "Are you sad? Are you mad?" "Have a cry, eat a sweet," and "Pick your nose, scratch your feet." In addition, the first verse is composed totally of questions. This repetition is noticed by the listener and enhances the message of the poem.

In conversation and prose we try to avoid repetition. We often use alternative words in order to avoid too much repetition. Repetition produces additional, unwanted categories in the mind of the listener which interfere with the content or message of the communication.

Use of repetition

This is **really something**. Don't you agree it is **really something**? I mean the music and the decorations and the food. It's **really something**.

versus

Avoidance of repetition

This is **so neat**. Don't you agree it is **grand**? I mean the music and the decorations and the food. It's **just great**.

In contrast with conversation and prose, we welcome repetition in poetry, just as we do in music. In poetry, repetition provides additional categories in the mind of the listener which supplement the images associated with the words. Repetition can even provide the dominant categories in the mind of the listener and be more important than specific images provided by the words.

Music

Exercise 8: Music and repetition

Listen to a piece of music. How many kinds of repetition can you identify in the piece?

Music provides a composition for the audience to categorize. A piece of music is composed of an arrangement of sounds, durations, and intervals played by one or more instruments. Music relies very heavily on repetition to help the audience categorize the composition. If phenomena are repeated, people can categorize them. The more often phenomena are repeated, the easier they are to categorize. However, if music provides too much repetition, the music will be too easy to categorize and will soon become boring, tedious, and even irritating. If music provides categories that are too similar to those the audience is already familiar with, it will not generate interest. The more complex, varied, and unfamiliar the music, the longer and more exposure it takes for the listener to fully categorize it. However, if the music provides too little repetition, it will be too difficult for the audience to categorize.

A piece of music provides a variety of categories for the audience to categorize. Often there are major themes which are frequently repeated. In addition there are slight variations on these themes. Any change or difference is experienced by the audience as a new category to categorize. Such variations in a theme may be produced by changes in one or more notes, in chords, in shifts within a scale, in keys, in the instruments used, and in how loudly the music is played. In addition, there are alternative themes and there are transitions between themes.

People create and listen to music because music provides people with pleasure. Pleasure from music comes from placing unfamiliar sounds and combinations of sounds into categories. There are many types and levels of categories in music. These include pitches, scales, durations, rests, beats, timbres, measures, chords, melodies, rhythms,

harmonies, themes, and movements. Unfamiliar sounds and combinations of sounds produce tension because they differ from the categories people are already familiar with. When people organize unfamiliar sounds and combinations of sounds into categories, this tension is released and people experience the release as pleasure. If the sounds and combinations of sounds are already familiar, then they match the categories a person already has. Therefore the person does not feel tension, there is no tension to release, and there is no pleasure to be experienced. On the other hand, if the sounds and combinations of sounds are difficult for a person to place into categories, then the person continues to feel tension, cannot release this tension, and cannot experience pleasure.

The problem for the composer is to produce sounds and combinations of sounds which are unfamiliar to the listener so that they generate tension and interest, yet which can be easily integrated into categories by the listener so that they produce pleasure. Clearly, composers differ from each other in how well they do this. The composer creates original music by using various instruments to produce unfamiliar combinations of sounds, durations, and intervals as a means to generate novel melodies, rhythms, and harmonies. A great variety of techniques are used by composers to create phenomena which listeners can easily integrate into a category. Most of these techniques are based on repetition. Repetition is highly successful in generating categories because the listener places repeated phenomena into the same category. Repetition allows a listener to recognize the existence of a category and to become familiar with it. If there is too little repetition, the listener fails to recognize the existence of a category, does not get an opportunity to become familiar with the category, and does not receive pleasure from the music.

Much music consists of a succession of sets, with each set composed of two or more consecutive measures containing repeated text. For example, a set may consist of two measures, in which a unique combination of melody, rhythm, and/or instruments is presented in measure one (1A), and repeated exactly or nearly exactly in measure two (2A). (Numbers, such as 1 and 2, designate the measure, and letters, such as A and B, designate the specific musical combination within a measure. When the letters are identical, such as A and A, they

indicate that the specific musical combination is identical in both measures.) Similarly a set may consist of four measures, in which measures one and two provide a unique combination of melody, rhythm, and/or instruments (1A, 2B), which is repeated exactly or nearly exactly in measures three and four (3A, 4B). Likewise, a set may consist of eight measures, in which measures one and two provide a unique combination of melody, rhythm, and/or instruments (1A, 2B), measure three may repeat measure one (3A), and measure four is unique (4C); and immediately thereafter the entire first four measures are repeated in measures five through eight (5A, 6B, 7A, 8C). When a set includes one or more human voices, the words, sounds, phrases, and sentences are also repeated. A specific set may or may not be repeated again later in the piece of music. The composer uses a unique combination of melodies, rhythms, and/or instruments to distinguish one set from the others.

A listener finds music easiest to categorize when it is the genre he usually listens to. If the style of music is too unfamiliar to the listener, then the music is difficult for the listener to form into categories. This is true even when the music contains ample repetition. Thus people find music difficult to categorize which differs considerably from their own musical experience. This can occur when the music is from a different genre, historical period, or culture than one's own. It also happens with certain artists and musical arrangements within the genre one usually listens to. With repeated exposure, however, one becomes more familiar with the categories in an unfamiliar piece of music. As a result, one can grow to like music which one did not like initially, including music from another genre, historical period, or culture. Similarly, one may initially have trouble reading a technical book or dislike a school of painting, but as a result of exposure later find that the text is easier to understand and the art is easier to appreciate.

A piece of music has both an external and an internal environment. The external environment consists of the other pieces of music that the listener is already familiar with. Thus in order to provide interest and pleasure, a piece of music must include categories which are different from the categories provided by the other music that the listener already knows. At the same time, a piece of music has an internal environment. The internal environment consists of the categories used within a piece of music. As a listener listens to a piece of

music he becomes familiar with the categories within that piece of music. If there is too much repetition within the piece of music, the listener will quickly become too familiar with it, cease to receive pleasure from it, and find it tedious. Even if a piece of music is unfamiliar and different from other music, the piece can quickly make itself too familiar by including too much repetition. This can even occur the first time the person hears the piece of music. When people are repeatedly exposed to phenomena which they have already categorized, they find it wearing. For this reason a composer does not want to produce more repetition within a single piece of music than a listener requires in order to establish and enjoy categories.

At the same time, once a category becomes familiar one can return to it for additional positive stimulation. This occurs in two ways. Music normally alternates between different categories of phenomena. These categories may be familiar, a variation on familiar categories, or unfamiliar categories. Each category must be focused on and identified. Changes in categories require categorization, and successful categorizing produces pleasure. One obtains more pleasure from categorizing different categories (A, B, C, D, E, F) and alternating between familiar categories (A, B, A, B; or A, B, C, A, B, C) than one obtains from repeatedly categorizing the same category (A, A, A, A). There is a second way in which one can receive positive stimulation from familiar categories of music. Often long periods of time pass before one listens to a piece of music again. During this time one is likely to have categorized countless other phenomena of all kinds. Therefore when one is exposed to a familiar piece of music again, the music is no longer as familiar as it once was. Similarly, one can read a book again or see a film again after a period of time and will have forgotten much of the detail and sometimes even the plot. The more time that passes, the more one's familiarity decays.

However, no matter how much a piece of music differs from other pieces of music, with repeated listening every piece of music eventually becomes more familiar and less interesting. This is why so much new music is created and consumed. We find pleasure in a specific piece of music, exhaust this pleasure as we repeatedly listen to it, lose interest in the piece, and need fresh music in order to experience additional pleasure. This same process occurs with literature,

paintings, film, design, and all the other arts. The more familiar something becomes, the less interesting it is. Something unfamiliar and fresh is more interesting than returning to something familiar again and again. We no longer find phenomena interesting when we have fully categorized them.

Many pieces of music provide a strong repetitive beat that listeners feel like moving to. This beat is normally repeated through the entire piece of music. One way of moving to music is to dance and to "hit" the beats. However, there are many forms of movement other than dance. Instead of dancing, people may move one or both hands or feet up and down or back and forth in time with the music. They may clap. Or they may move their head or torso from side to side or back and forth. They may also sing, hum, or make other oral noises which coincide with the music. Such sounds can be viewed as dancing with the vocal cords. However, regardless of how people move in response to music, the surprising thing is that they move at all. Normally, people do their best to avoid expending energy. As a result they assiduously avoid movement. (See the chapter on Conserving Time and Energy in Volume Two of this series.) The desire to move to music and have their movement coincide with the beat of the music overcomes the desire to avoid effort and the unpleasant feelings of fatigue. Even when tired, people feel inclined to move to certain music. People normally repeat their movements when they move to music. However, people quickly become fatigued as a result of repetitive movement. Therefore when people move to music, they have to frequently alter their movement. Musicians who perform dance steps during stage performances, repeatedly change their dance steps. People change their movements to find alternative ways to move to music which are not yet as fatiguing.

When people move to music they go through a sequence of repeatedly tensing and relaxing in time with the music. Thus if they are dancing they alternate between tensing and relaxing various leg muscles, and if they are singing they alternate between tensing and relaxing their vocal cords while they release their breath. This tensing and relaxing matches the beat of the music. When one succeeds in accomplishing an objective, one releases tension and experiences pleasure. With music one succeeds in accomplishing an objective each time one succeeds in matching the beat. There are different movements

to music. One form of movement consists of simply alternating between tensing and relaxing a specific group of muscles. One does this when one taps one's foot, raises and drops one's hand against another surface, snaps one's fingers, or bobs up and down while standing. A second form of movement involves tensing muscle group A while one relaxes group B, then relaxing muscle group A while one tenses group B. One does this when one swings or sways one's hand, arm, or body from side to side or back and forth. A third form of movement consists of tensing muscle group A repeatedly over short intervals so that one moves progressively further in one direction, followed by relaxation of group A and movement in the opposite direction. The relaxation of muscles is experienced as pleasure. The sequence of tensing and relaxing muscles is an important one for the body. One becomes very much more fatigued when one continues to tense a muscle without relaxing it. If instead one alternates back and forth between tensing a muscle and relaxing it, one can make use of the muscle for a much longer period.

The louder the music, the more one feels like moving to it. This suggests that music has to dominate one's consciousness, i.e., one has to be focused on it, before one feels like moving to it. Clearly, one can focus on music which is not loud. However, when the music is loud, it is much more difficult to focus on anything other than the music.

Song is another component of many pieces of music. Song is very similar to poetry. It frequently conveys a message, tells a story, or expresses a feeling. It uses simple words and phrases, and it relies very heavily on repetition. In songs, the words, the phrases, the number of syllables, the number of lines in a verse, and whole verses are often repeated. When a singer is accompanied by backup singers, their sounds and words are often very simple and highly repetitive.

Photography

Photographs are rectangular. The subjects which are commonly photographed are a) those that are sources of positive reactions, such as family, friends, and pets, either posing or involved in activities, and b) those that are sources of positive stimulation, such as travel scenes. People are often encouraged to smile in photographs. Few photographs are taken of people crying. Subjects are emphasized by centering them

in the photographs, by placing the camera closer to them so they appear larger than surrounding objects, and by placing them in clearer focus than their surroundings. Photographers make their subjects easier to categorize by isolating them from other phenomena. Photographers move or focus their camera to exclude surrounding objects. They also attempt to photograph their subject in front of a solid, clear, or consistent background so that background objects are not confounded with the view of the subject. Photographers often arrange their subjects symmetrically, particularly when a number of people are being photographed. The people on each side are often arranged on the basis of number; sex; size; dress; hand, arm, and body positions; and items they are holding; so that the two sides of the photograph are symmetrical or balanced. When there is a trophy or award, it is usually placed at the center of the photograph. When a number of smaller, separate photographs are arranged within a larger rectangular frame, they are usually positioned symmetrically, often in horizontal and vertical rows.

People prefer subjects with sharp, clearly defined edges rather than amorphous subjects. People may also photograph subjects at an angle rather than head-on in order to produce a photograph that is more interesting. Subjects which are selected often have a perfect appearance.

> When I'm photographing, I find myself avoiding subjects which are dirty, broken, crooked, chipped, damaged, torn, or imperfect in some way. Often when I get ready to photograph a subject, if I notice that it has something wrong with it, I decide not to photograph it. #7097

Digital processing of photographs enables one to sharpen edges, produce stronger contrasts, and remove objects which interfere with viewing the subject.

Dance

People learn specific dance steps from each other to use together with specific styles of music. These steps are consistent with the emphasized beats in the music. People learn many of these steps from watching others dance and mimicking what they do. They are also taught steps

by friends and acquaintances. In addition, people attend dance schools to learn specific styles of dance. They may do so in order to know what to do in public situations when people dance. Often people feel uncomfortable when others seem to know what steps to do to a particular type of music, but they do not. They fear their own efforts are likely to be criticized and ridiculed. In addition, people undertake formal training in dance to be able to perform dance steps before an audience. Thus training is provided in social dancing, ballroom dancing, ballet, modern dance, jazz, tap, highland dancing, square dancing, hip hop, and line dancing. In all of these situations people attempt to repeat the steps others are doing as exactly as possible.

> The whole idea of a ballet class is to learn to do the movements as perfectly as possible. When the teacher sees students do things incorrectly, she corrects them by telling them what they are doing wrong, putting her hands on the students to help guide them through the correct motions, or caricaturing their incorrect movements so they can see what they are doing wrong. When steps seem too difficult for the students, the teacher will isolate the movements and have the students practice one movement at a time or substitute a more elementary movement. When the teacher is watching or correcting specific students, often other students practice the movements so they'll do them right. Mirrors are provided to enable students to correct themselves. The teacher has the students do the movements repeatedly, so that the movements become automatic. #7098

Dance steps are frequently conducted in a square, circle, or straight line. The steps themselves involve a considerable amount of repetition. When one learns a specific type of dance, often one learns a basic step and variations on that step. When dancing, one repeats the basic step and the variations many times. Performers normally repeat each set of movements several times or more, and multiple performers commonly do identical movements together. In addition, multiple performers often wear identical costumes. Many dance steps employ symmetry. A dancer will do a set of movements to one side, and then do the mirror image of the same movements to the opposite side. Individual performers use many symmetrical body positions, and two or more performers often present symmetrical formations together. When a stage is used, individual

performers and groups of performers frequently perform in the center. When dancers perform together they are often positioned equidistant from each other. One also sees groups separated on the basis of similarity, as when children perform separately from teens and when males perform separately from females.

Dance performances provide unfamiliar movements and combinations of movements for the audience to categorize. Variations in movement may differ only slightly but still produce a new category in the minds of the audience. For example, dancers may perform a combination of movements with their arms in a certain position, such as straight out horizontally, and then perform the identical combination of movements with their arms in a different position, such as raised overhead vertically, and it will appear as a different category to the audience. Repetition is important in dance because it enables the audience to categorize unfamiliar movements.

Gardening

Numerous orientations are employed when people garden. Vegetables are normally grouped together in rectangular plots. Each type of vegetable is usually planted in one or more straight lines. Individual plants and rows of plants are placed equidistant from each other. Inconsistencies, such as sickly plants and weeds, are removed. Trees and flower beds are often placed parallel and perpendicular to property lines, streets, driveways, and houses. Circular areas may be cleared around trees. Trees which are identical in species and size, or repetitive, are often planted in a row, or straight line. Hedges may be placed parallel to property lines and are often trimmed to be a consistent size and shape, such as rectangular, or box-like. Trees may be trimmed to be more spherical in shape. Flowers are normally grouped together in flower beds. Identical kinds of flowers, such as roses or daisies, are often placed together (grouping on the basis of similarity). Weeds and dying plants are considered inconsistent and are removed from flower beds. Lawns are frequently mowed so that the grass will be a consistent height. Often particular attention is given to grass which is located close to trees, houses, or other structures, and it is trimmed to be the same height as the surrounding lawn (perfection). The desired result is one continuous,

consistent field of grass (a uniform surface). Special attention may be given to trimming and removing grass along the edges of driveways, sidewalks, and flower beds in an effort to maintain uniform edges. Plants which interrupt the appearance of the grass are frequently considered inconsistent and are permanently removed, often through considerable effort. Lawns may be chemically sprayed to kill inconsistent plants.

Focus, categories, orientations, and familiarity

Normally what one notices about one's environment and the objects in it is very limited. Often we are engaged in the pursuit of a specific objective (executing a model). We notice what could help us or interfere with us in achieving that objective, and we ignore practically everything else. Thus we move where we need to be to achieve our objective, we focus on and avoid obstacles when we move from one location to another, we focus on the materials and activities we need in order to achieve our objective, and we monitor what we are doing to ensure we are accomplishing our objective. We focus on what we need to focus on. Our focus is very narrow, and when it is directed at one thing, we seldom notice other things. Therefore, we do not notice the great majority of our surroundings and whether they are oriented or not.

Nevertheless, sooner or later we do focus on most of the phenomena in our environment. We may pursue a different objective and focus on different phenomena, we may search for a specific item, our attention may wander and we may focus on one or more objects in our area, someone may bring something to our attention, or we may seek to move things out of the way or to straighten up. We may scan our surroundings to see what is happening, or react to a comment or question from another person, such as "What a mess," "Isn't it beautiful?" or "What do you think of the _____ (house, décor, garden, neighborhood, or weather)?" When we do focus on specific phenomena, we often do

notice whether or not they are oriented. Phenomena that are oriented are less work to categorize and therefore appear more attractive to us, and phenomena that are not oriented are more work to categorize and appear less attractive to us.

When we scan and categorize we tend to do so very quickly and superficially. Our environments contain a multitude of objects and other phenomena. The less attention we need to devote to each phenomenon, the more efficiently we can operate. It is to our advantage to expend as little time and energy as we can identifying (categorizing) and dealing with specific phenomena. Often simply identifying a phenomenon is enough. At most all we need to know is how to use it for our own purposes. We do not need to continue categorizing the phenomenon in order to know everything about it. We rarely need to understand how the phenomenon is constructed, why it works, or all the things it can do. I need to know how to identify and operate my car, computer, stove, washing machine, telephone, electric lights, and water faucets. I do not need to know how each of these things is constructed, why it works, or how to fix it.

When we focus on something specific, such as a particular object, face, activity, or piece of music, we attempt to identify (categorize) what we are dealing with. The more oriented it is, the easier it is to categorize. The less oriented it is, the harder it is to categorize. We obtain positive stimulation when we categorize phenomena. Unfamiliar phenomena produce tension, and when we categorize them we release this tension. The release of tension is experienced as pleasure. It is easier to categorize and obtain pleasure from phenomena that are oriented than it is from phenomena that are not oriented.

The more familiar we become with specific phenomena, the less tension they produce, the less effort it takes to categorize them, the less tension we release when we do categorize them, and the less positive stimulation (pleasure) we receive from them. Normally the more familiar we become with phenomena, the less interesting and stimulating they become. With repeated exposure, we require less effort categorizing them and receive less pleasure from them when we do categorize them. Therefore, with repeated exposure, specific art, crafts, jewelry, music, faces, clothing, décor, natural scenes, television series, books, films, ideas, news, and gossip become less interesting. Phenomena that were

once very interesting or attractive to us become ordinary and commonplace. Instead, we are more attracted to and stimulated by art, crafts, jewelry, music, faces, clothing, décor, natural scenes, television series, books, films, ideas, news, and gossip that we are not familiar with. The more oriented phenomena are, the easier and faster we become familiar with them, and the sooner we lose interest in them.

Feelings associated with orientations

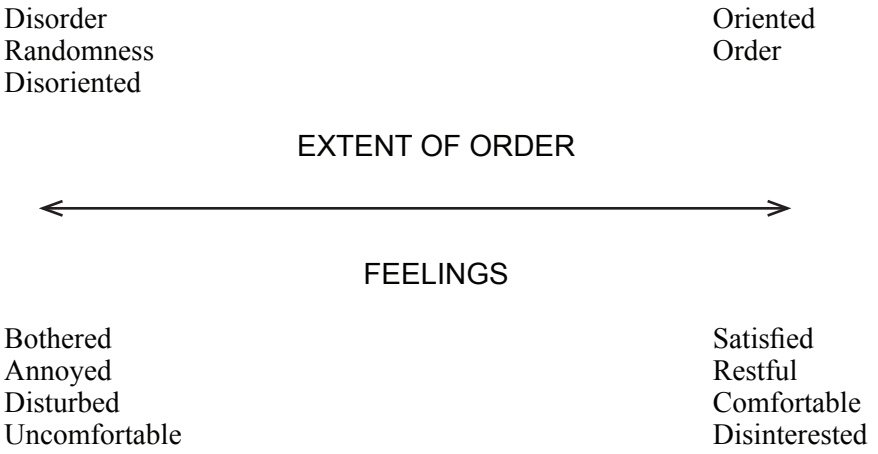
Applying orientations

Normally humans conserve time and energy (see the chapter on Conserving Time and Energy in Volume Two of this series). People minimize their effort, do as little as they have to, move as few muscles as possible, and relax as much as they can. They experience effort as hurt, and seek to minimize this hurt. Given the extent to which humans minimize their effort one would expect humans to devote no time and energy orienting their environment. However, this is not what happens. People put a great deal of effort into establishing and maintaining an oriented environment. They do this on an everyday and regular basis. They often go out of their way to orient their environment, and feel bothered when they do not. Clearly living in an oriented environment is very important to humans. Their desire for an oriented environment is frequently greater than their desire to conserve time and energy. The need of the human brain to minimize mental effort by operating in an oriented environment is therefore often greater than the need of the human body to conserve time and energy by minimizing physical effort. We are seeing the feelings of the human brain override the feelings of the human body.

One can draw a continuum relating orientations to feelings (Model 2). As one moves away from orientations toward the extreme of disorder and randomness, people feel increasingly bothered, annoyed, disturbed, and uncomfortable. Objects and arrangements which do not comply with human orientations bother people. The less oriented they

are, the more they annoy. In contrast, as one moves toward the other extreme of orientations and order, people feel increasingly satisfied, restful, comfortable, and disinterested. Objects which are oriented, normally do not disturb people and do not intrude on their consciousness.

Model 2: Orientations and feelings



People find phenomena unpleasant when they are not oriented. Phenomena which do not conform to human orientations are often considered annoying, tiresome, or ugly. This is the case with phenomena which are not horizontal or vertical, parallel or perpendicular, centered, in straight lines, equidistant, or repetitive. It is also true with phenomena which are asymmetrical, complex, imperfect, incomplete, inconsistent, or mixed in with different kinds of phenomena.

> Early this morning I took my garbage outside the apartment house. When I reentered, I noticed someone had left this stuff piled together in the hall of the apartment house. All kinds of things were jumbled together, including a sewing machine and a vacuum cleaner. It was

too much; I couldn't sort it out in my mind. Even though it was early in the day and I was well rested, it was just too chaotic to deal with. I was glad to get back inside my apartment. I feel the same way when my kitchen counter or kitchen sink is covered with dirty dishes. #7099

I went into this department store and the main floor was densely packed with racks and racks of clothes. It made me so uncomfortable I just wanted to get out of there. #7100

I find it very unattractive when people twist their mouths so one side looks different from the other. They often do so to indicate their displeasure or disagreement, but I'm turned off by the person who does it. I also find people very unattractive whose facial expressions are twisted after they've had a stroke. #7101

Even though Tai Chi is supposed to be good for you, I don't want to do it. The other day I was with a group of my friends at the beach, and they started doing Tai Chi and wanted me to join them, but I just sat there and watched. The body postures are ugly, and I think it's because they lean at an angle, and turn so one side of the body looks different from the other. I react the same way to the different schools of dance. I like jazz and ballet, because the body postures are horizontal and vertical. But I don't like most modern dance, which uses other kinds of postures. #7102

I needed to buy a television set, and found a standard set with the features I wanted. However, the front of the set consisted of a screen on one side and a narrow speaker section on the other side. I really preferred the stereo set from the same manufacturer over this standard set. The only noticeable difference between the stereo set and the standard set was that the stereo set had a speaker section on both sides of the screen. It was much more attractive because it looked balanced. I wasn't going to use the stereo feature, but I sure liked the fact it looked better. If it had only cost $50 more, I'd have taken the stereo set. But it cost an extra $200, so I bought the standard set. #7103

One thing my mother does that bugs me is how she makes her beds. She pulls the puff over the bed and pats the pillows and the bed is made. Right? Wrong! You go to lift the puff and the blankets are uneven and messy. How disgusting. #7104

I get anxious when I visit someone in a messy home. One day I visited my friend and entered her bedroom. There were piles of books, papers, and clothes on her desk, bed, and floor. It was just a mess. I felt claustrophobic because there was practically nowhere to move or sit down. I became anxious and my heart began to race. I told my friend she needed to clean things up, but she replied that it wasn't so bad. I don't know how she could live in a place like that, because I sure couldn't. #7105

I know women who get upset and depressed when they break a fingernail, because they think this undermines their appearance. #7106

Occasionally I take home a T-shirt I've just bought, unwrap it, and find out it is "a golf T-shirt." A golf T-shirt has a shirt tail which is several inches longer in the back than in the front. They are designed this way so when you bend over to pick up or put down your golf ball, the shirt tail doesn't pull all the way out of your pants. I hate them and only buy them by mistake, because they look so unattractive with the back much longer than the front. I would never wear a golf T-shirt with the tail outside my pants. Instead, I want shirts with tails which are even all the way around. #7107

It's impossible for the lawn mower to get close enough to cut all the grass around the trees and alongside the house. So after you cut your grass you have this nice flat lawn interrupted by tufts of full grown grass. It's very noticeable and leaves the lawn looking scruffy. #7108

I was over at my friend's house and it was clear she was quite proud of the way she had decorated her Christmas tree. After I admired it, she apologized that the very top of the tree was not perfectly straight, but tilted to the side. I hadn't noticed it before, but I could see it was slightly tilted. #7109

I work with Ted. One morning Ted found a number of file folders that were out of order alphabetically in the file cabinet. Boy was he mad. Ted stated, "I would like to get hold of the person who did this for one minute, just one minute." He was quite flustered and had his tail in a knot for the rest of the morning. When break came he said, "I'm going for a coffee and not coming back!" He returned in a better mood, but still somewhat agitated. #7110

People feel uncomfortable with disorder and randomness. As a result they constantly seek to introduce more order and organization into their

environment. Disorder intrudes on people's consciousness. It is a source of bother and tension, and it disturbs people. It often nags at them each time they see it until they do something about it.

> I really am bothered by a picture or mirror which isn't hanging straight. I feel a strong compulsion to straighten it so the edges are level. #7111

> After I made my bed I lay down on it to read a magazine. When I got up I noticed that the bedspread had become wrinkled where I was lying on it. I smoothed out the wrinkles before I left the room. #7112

> As I entered the department office I noticed the corner of a poster still taped to the wall outside the office door. Obviously someone had torn off the poster but left a corner behind. On previous occasions I had noticed this corner stuck there. This time I pulled it off and threw it away. I don't want to have to see it again. #7113

> We have six pillows on our bed, and one of them always annoys me. Somehow it keeps getting twisted so its corners don't stay in the corners of the pillow case. I keep trying to adjust it, but nothing seems to do any good. #7114

> While I was visiting my friend I watched her get up and straighten up the items on her coffee table. I asked her what was going through her mind when she did this. She replied that she wasn't really thinking about it. She said, "I just looked over and saw it was messy. I needed to put things where they need to be. It's like a compulsion I have. When I see a mess I have to correct it." #7115

> When I press a strip of tape against paper, a crease sometimes appears in the tape. The crease bothers me and I press on the crease to try to make it disappear. This rarely works, so sometimes I pull the tape off gently and start over again with a fresh strip of tape. #7116

> I work at a bookstore and we constantly have to put the books into proper order. For one thing, customers leave books lying all over the place and we have to put them back in the sections where they belong. It is really noticeable when a book is reversed, so that the edges of the pages face outward and the spine is hidden from view. It looks different from all the other books and you notice immediately. Every time I see this I turn the book so the spine is outward. When I went in to work today I noticed that there was a row of books on a

table between two bookends. The books were tipped over with their spines uppermost. However, the bottoms of the books were not aligned and the first thing I did was adjust them so the bottoms were all in a straight line. These things bother you every time you see them. But once you put things right you no longer notice them. #7117

I usually make a list of things I have to do or things I have to buy. Then as I do each one I scratch it off the list, and I often think of new things to add to the list. Before long the list looks messy with things scratched off, and this annoys me. So I make a brand new list which is neat and clean. My husband is the same way. He'll type a draft of a letter or paper on his computer and print it off. Then he'll write in some corrections and before long it looks so messy he doesn't like to work with it. So he'll type in his corrections, print off a fresh copy, and continue correcting the fresh copy. #7118

As soon as I feel my room getting the slightest bit cluttered, I have to straighten it up. It's as though I'm claustrophobic and need that certain amount of space. #7119

Sometimes I'll eat my lunch or a candy bar at the table where I'm working, and afterwards I want to sit there and do some reading or writing. But having the dirty dishes or the ripped up candy wrapper next to me bothers me. So I get up and put them in the kitchen. Then I can sit there and not be bothered while I read or write. #7120

I like to get rid of weeds so the garden looks neat. Weeds look so messy. It's best to burn them so their seeds won't make more weeds. #7121

I was visiting a friend of mine who is a student. We were in her room just talking and listening to music. She keeps her room well organized, and there isn't a lot of stuff in it. Her bed is always made, everything is put away, and there is nothing on her floor. The items on her desk are in separate containers and she keeps the materials for each course in a separate binder. While we were sitting there she stood up and walked over to her desk. There were some items on her desk because she had been doing some schoolwork. She took the paper out of her printer on the desk. Then she tapped the ends of these sheets of paper on her desk to get them perfectly even and reinserted them into her printer. Next she placed the materials for each class into the appropriate binder, and she put her pens into a case and

placed the case into a drawer of her desk. When she finished this she sat back down and resumed talking to me. This looked like ordinary behavior on her part and she didn't seem to mind doing it. #7122

I was grading student papers and picked up the next one. Normally the pages of each paper are placed exactly on top of each other and are neatly stapled together. However, in this case the pages had been left at slightly different angles to each other before they were stapled together. It looked sloppy. I considered removing the staple, rearranging the pages neatly, and re-stapling it. Then I decided I would just ignore the disorder and go ahead and grade the paper. But the uneven pages continued to annoy me. So I took out the staple, carried the staple to the wastebasket, went and got my own stapler, arranged the pages neatly, and re-stapled the paper. Afterwards I felt more comfortable dealing with the paper and proceeded to correct and grade it. #7123

When our department moved to another building, the maintenance staff carried my boxes of books over to my new office. Later, when I entered my new office I found they had placed the books on the shelves. However, the books were not organized the way I like them. When I work in my office I like to put my hand on the book I want, and not have to search for it. But now my books on history, theory, and specific topics were all mixed up. I found it very upsetting. I went to teach my class, but when I got there I realized I was so distraught because my books were in a mess that I wouldn't be able to teach properly. So I cancelled my class and went back to my office to reorganize the books. Once I got them into the categories I use, I was able to relax. I could have always come in at night or on the weekend to reorganize the books. But I was so bothered that I needed to deal with this as soon as possible. #7124

The relationship between orientations, reality, tension, and action is specified in Model 3.

People go to considerable effort to ensure they will not be bothered by the feelings associated with disorder.

I often work at home, but I don't like to be in my apartment if it isn't relatively neat. So I've learned to make the bed every morning and to wash the dishes at night. Otherwise I just want to get out of the place. #7125

Model 3: Orientations, reality, tension, and action

Symbols:

≠ = not equal to, inconsistent with
= = equal to, consistent with
→ = produces

Reality ≠ Orientations → Tension → Action

When one focuses on specific phenomena (reality), one becomes aware whether or not the phenomena match one's orientations. When phenomena (reality) are inconsistent with one's orientations, one experiences tension and takes action to remove the tension. One attempts to change reality so that it will better match one's orientations and the tension will disappear.

Reality = Orientations → No tension → No action

When phenomena (reality) are consistent with one's orientations, one does not experience tension, and does not act to remove the tension.

> When I'm working on a rough draft that doesn't matter, I don't understand why I have this compulsion to correct what I'm typing so everything's perfect. If there's a letter which I failed to capitalize, or a misspelled word, or an unnecessary space, I feel I have to correct it, even though it's just a rough draft. #7126

> After my laundry is washed I spend a lot of time matching my socks. All of my socks are dark blue or black. I always buy the same brand and color, but because I've bought them at different times and worn some longer than others, certain pairs are slightly different lengths and shades than other pairs. So I carefully try to find a mate for each sock which is the identical length and shade of blue or black. There are always several I can't find a mate for and I put them aside for a future match rather than go ahead and use them. I would feel uncomfortable wearing two socks that differed in length or shade. I would feel kind of sloppy, and worry that others might notice. #7127

> I eat at a Chinese restaurant which puts their place mats underneath a clear plastic tablecloth. I ate there last night, and when I sat down and pulled my chair under the table I noticed that my place mat was over to my left side rather than centered right in front of me. I would have preferred to keep my chair where it was, centered between the legs of the table. However, twice I pulled the chair further to the left until the place mat was centered beneath me. I felt a little uncomfortable to no longer be sitting dead center between the table legs. But it would have been much more disconcerting to eat dinner with the plate on the far right hand side of the place mat. A previous time when I went there I noticed immediately that the place mat was turned at about a 15 degree angle. It bothered me and I kept noticing it. So just before my food arrived I reached under the tablecloth and straightened it. I didn't want it annoying me while I ate dinner. #7128

Not only do items which are properly oriented "look better," but once they are oriented people are unlikely to be bothered by them in the future.

People go to a great deal of effort to orient their surroundings. Much of the activity of getting a place in order consists of readjusting furniture, pillows, knickknacks, books, pictures, papers, music and movie disks, towels, and other objects so that they are in a straight line, horizontal or vertical, parallel or perpendicular, centered, equidistant,

and grouped together on the basis of similarity. The more that objects violate these principles, the more disorderly they appear.

> When I have a stack of papers or books, it looks messy if they are turned at different angles relative to each other. But if the edges are even or parallel they look orderly. I also pull books into position on a shelf so the spines of the books are all flush with each other, and this looks neater. #7129

People frequently place items so that they are parallel or perpendicular to neighboring edges.

> When I take off my boots, shoes, or slippers I put them neatly next to each other against the edge of a wall or rug. #7130

People return objects to their previous positions where they were lined up, parallel, perpendicular, centered, or equidistant relative to other objects. People speak of "straightening up" and getting things "squared away." People also refer to creating more order when they want to correct problems, and use expressions such as "We need to get this straight," and "I want you to straighten this out." People also attempt to restore order by removing items from surfaces or stacking them on top of each other, which frees more surface area and provides horizontal planes. In addition, people also place objects which are in disarray out of sight. When they are in a box, drawer, cabinet, closet, basement, garage, shed, or attic, people do not see them, and when people do not see them people are not annoyed by their randomness. People also hide disorder, such as dirty clothes inside a hamper, a messy room behind a closed door, dirty dishes inside a dish washer, and a dirty bathtub behind a shower curtain. It is also easier to forget endeavors which are not finished when they are placed out of sight. The principle which applies is "Out of sight, out of mind."

People get pleasure from orienting their environment.

> I am focused when I clean, and I get pleasure and enjoyment from cleaning. #7131

> When I'm bored or procrastinating, I often clean my bathroom or bedroom because I find joy in doing so. When everything is organized,

> I have some order in my life and I feel in control. I get a lot of satisfaction from rearranging and redecorating my room and do so often, and I spend my money for paint and various containers. I get really excited and happy to be able to organize new things. #7132

After people apply an orientation to "correct" something that disturbs or challenges them, they feel pleased and satisfied. The pleasure is produced when they remove, or release, the tension produced by what it was that bothered them.

> Every time I went into the bathroom yesterday, I noticed that the throw rug in front of the sink was turned slightly at an angle. It bothered me mildly, but I didn't do anything about it. However, today when I entered the bathroom, I repositioned the rug so it was parallel to the sink. I felt better and satisfied with what I did. #7133

> When my apartment is messy, things seem jangled and I feel tired. It's stressful, because I hate looking at the apartment and thinking about how much I hate straightening it. But once it's straight, I can relax. When it's tidy I feel peaceful and my life seems more harmonious. #7134

> I like the feeling of knowing everything is in its place. I can go on and do other things once I know there's nothing else to put away. #7135

> I feel good when I finish reading a book. It's like I've completed something and can go on to something else. I get a sense of accomplishment and often mention I've finished the book to someone else. I know I wouldn't feel this way if I were to read the same number of pages in several different books and didn't finish any of them. #7136

People feel comfortable in an oriented environment. They find their surroundings restful and peaceful.

> It's always nice to see a clean room. #7137

> I get stressed out when I go home and it's so messy. It makes me feel good when I can come home and the place is clean and in order. It's a lot easier to breathe. #7138

I feel content and happy when I know everything is where it belongs. #7139

I feel reassured when I know where everything is and that everything is where it is supposed to be. I feel like I am in control and that I have order in my life. If I have a lot of school assignments to do, I feel overwhelmed by the pressure to get them done. I will go to my room and start cleaning. When I do this I become calm and have a feeling of accomplishment. Even if I don't get all my assignments done, I know I've made some kind of peace in my own life. When my room is clean I know it is a place where I can go to be safe and comfortable. #7140

I see a real change in my family depending on whether our house is messy or neat. When things are neat and clean people smile more and comment on how nice everything looks. But when things are messy I see more frowns. People complain about the mess, get angry, and put pressure on each other to clean up. However, individual family members differ in the degree to which they do this. #7141

People realize that others are bothered by disorder and imperfections. When they invite others to their home or apartment they often seek to make sure that there is nothing present which might bother visitors because it will reflect badly on themselves.

It's incredible all the things you do when you invite people over to your house or apartment and straighten up beforehand. Sometimes you take the day to straighten up, and other times you do as much as you can in an hour or two. You go right through your place, and any time you see something that looks dirty or messy you correct the situation. You do things like dust and wash ledges, shelves, and tables; clean windows, counters, and other surfaces; sweep and mop floors; vacuum rugs; wash the bathroom tub, toilet, sink, and floor; clean every spot off of your stove, refrigerator, mirrors, windows, walls, sinks, toilet, tub, tables, and kitchen floor; wash every dirty dish; make sure the dishes, glasses, and eating utensils that guests will use are spotless; straighten the contents of the refrigerator; empty wastebaskets and the garbage can under the kitchen sink (because anything in them looks messy); wash any marks off of the wastebaskets or garbage can, or at least turn them so the marks are out of sight; make the beds; put

> out fresh towels and make sure their edges are straight; line up chairs, couches, and tables; center vases, bowls, and lamps in the middle of tables; get rid of dead or shabby looking flowers or leaves on plants; clear the surfaces of tables, kitchen counters, floors, couches, and beds; line up small appliances, electronic equipment, the telephone, and anything else you leave on tabletops; and take papers, books, clothes, shoes, cassettes and compact disks, and other items and either line them up, stack them neatly, or collect them and put them out of sight in a box, bag, drawer, closet, or under the bed. And I'm sure that's not everything. There must be other things I do too that I've forgotten to mention. #7142

> I've always felt the best way to get around to straightening up my place is to invite people over. When people are coming I really work hard to get things neat. I'd be really embarrassed if they saw how messy my place can get. #7143

Considerable effort is made in stores, businesses, and other facilities that deal with the public to present a well-oriented appearance. They are constantly under public scrutiny. Owners and managers of businesses and agencies do not want their facilities to turn people away and gain a reputation for being messy or unclean. Therefore there is considerable emphasis on appearing orderly and clean. A major duty for employees is keeping things neatly arranged. In stores, goods are neatly arranged; the stock, display cases, and public areas are regularly cleaned; aisles are cleared of trash and other items; items are grouped together on the basis of similarity and labeled so that customers will have an easier time locating them; and items are placed back in order after being handled by the public. Thus in clothing stores items examined by the public are returned to their original locations and hung back up or refolded (normally into a rectangular shape). In restaurants tables are cleared and cleaned and chairs and tables are adjusted to be parallel with each other. In most stores items for sale are frequently placed so that their edges are parallel and perpendicular to the edges of shelves and counters. Display windows are frequently cleaned, and trash is removed from parking areas designated for the store's customers. Other facilities used by the public, such as washrooms, are frequently inspected and cleaned. Stores employ orientations in order to be more appealing to customers. Owners of retail businesses realize that because they are

in competition with other businesses, they need to be as attractive as possible, and this requires orienting their facilities and their stock and keeping them oriented. Most stores do not have the luxury that homeowners have of keeping various forms of disorder hidden from public view. A homeowner or apartment dweller can choose when and if other people are allowed to see how oriented or disoriented their place is.

People attempt to get others to apply orientations. Parents try to get children to pick up after themselves and straighten their bedrooms. Most chores consist of applying orientations. In addition, local governments attempt to control disorder by placing waste receptacles in public areas, collecting garbage, permitting trash disposal only in specific locations, instituting fines for littering, posting signs to remind the public of the fines, and employing people to remove dirt and trash from public areas.

> The City Council of Charlottetown passed a Cat Nuisance Bylaw. Some people were upset that their neighbors' cats were leaving paw prints on their cars or digging up their flowers. This marred the appearance of their cars and flower gardens. According to the bylaw, cats would be allowed to walk across a neighbor's yard, but if they caused "damage," people were to phone in their complaints and police would deal with the cats. #7144

Often people disagree with each other over how best to apply orientations and which orientations to use.

> I observed people getting ready for the East Coast Music Awards, which were being held at a hotel in downtown Charlottetown. Inside the hotel a large number of people were rushing back and forth everywhere. In the restaurant waiters and busboys were madly setting up tables with flower centerpieces and intricately folded napkins trying to make the tables look inviting and impressive. They paid attention to every little detail, moving eating utensils an inch or two to the right or left, trying to get them perfect. Two waiters argued for six minutes over how the napkins should be folded. Nearby two important looking men in suits were attaching fake gold decorations to the welcome board. They discussed their creative differences loudly, but with good humor. "I think that should go here." "No, put it there. We don't have much room to work with." "Is that OK?" Both of them commented that the decorations have to be perfect, and that they feel a lot of excitement in the air. #7145

People differ as to the degree of order they desire in specific situations. Often there is little appreciation for someone else's emphasis or lack of emphasis, particularly when it is applied at different times or to different objects or areas than one's own.

> Many people are annoyed by those they consider "neat freaks," who keep arranging and rearranging things. Other people don't see any need to move these things, but the "neat freaks" do. #7146

> My mom is obsessed with cleaning, and everything has to be kept in the right place. One day when Mom came home from work she started yelling for me to come downstairs. When I did so Mom was clearly angry and said the house looked messy and disgusting. I looked around and all I could see that was out of place were two pillows that had been knocked off the couch onto the floor. Someone had simply failed to put them back. I couldn't understand why Mom was so mad about this. #7147

> She's a borderline psycho. She's gone as far as separating wooden, plastic, and metal clothespins from each other and putting them in different bags. She even uses each kind for a different purpose. #7148

> None of us would have gotten Good Housekeeping awards, but the two guys across the hall were the worst I've ever seen. They had clothes piled in the middle of the room, bedclothes thrown just anywhere, and books and scribblers dropped among the rubble. #7149

Individuals often order things in private. When they do so in public, others are made aware just how much that person's emphasis differs from their own, and the other person's efforts are often seen as excessive.

> My brother has a compulsion to straighten things. One evening about half a year ago, four of us were sitting around a coffee table in my brother's living room half listening to the TV and half carrying on a conversation. I noticed my brother rearranging some magazines and a package of cards so they were perfectly aligned with the edge of the table. After he did so, he periodically touched the magazines to make sure they were still in place. He did this absentmindedly as he talked. When he went in the kitchen to fix coffee, I adjusted the magazines so they were at a very slight angle and no longer perfectly lined up against the edge of the table. I also pulled out a couple of cards so

they were just barely past the box's edge. When my brother returned he didn't look directly at the magazines and cards. But as he started talking, he adjusted their positions absentmindedly the way he had them before. I started laughing and pointed out this compulsion to straighten things to my brother. He was mildly embarrassed, laughed, and said he hadn't realized what he was doing. After this I thought he would control his behavior, but at various times during the remainder of the evening, he suddenly left his chair to straighten a book that was leaning a bit or to fix some dried flowers that were hanging over too much in a vase. Since then I have visited my brother several times, and each time he straightens something that doesn't seem quite right to him, such as a stack of magazines, a leaning book, or a cigarette package that isn't closed. He also constantly picks lint off people's clothing. When I ask him why he does this, he just shrugs and says these things bother him and he needs to straighten them up. #7150

Alice and I went to visit my friend Margaret. Margaret keeps her things very neat. And while we were there Margaret got up and organized a few things she felt were out of place. I noticed Alice watching her, and Alice looked annoyed that Margaret was busy cleaning instead of talking to us. Afterwards Alice said to me, "I don't know why she had to do that, because her place was hardly messy. It's a waste of time putting things into separate containers, and it bothers me when people do this." Alice commented that she doesn't like to clean her own room because it will just get messy again. She added, "Why should I make my bed in the morning if I'm just going to mess it up again that night." When I visit Alice I see piles of stuff everywhere. She assures me that she knows where everything is. She explained, "I don't like for anyone to touch my things or try to organize them because I can no longer find things." #7151

Sue and Linda work together. Sue keeps everything, including paper clips, pencils, and paper lined up perfectly on her desk. Sometimes when Sue isn't at her desk, Linda will drop some paperwork on it for Sue to do. When Sue returns and finds things out of line, she'll go into Linda's office and ask, "Who was at my desk?" When Sue visits Linda's office or Linda's home she occupies herself arranging Linda's articles so that they are perpendicular or parallel. This annoys Linda, and when she mentions it to Sue, Sue will say, "OK, I'm not gonna do it anymore." Then she rearranges the items in another pattern. For example, if there's a package of cigarettes and a lighter on Linda's coffee table, Sue will turn the lighter to be perpendicular to the cigarettes. Then when Linda objects, Sue will turn the lighter so it's parallel to the cigarettes. #7152

People sometimes introduce order in front of others and in public areas, even though they realize that others will consider their behavior extreme.

> I was in a department store and saw a bunch of sweaters scattered on a display table. I started to feel uncomfortable and had to deal with this. Even if the disarray didn't bother anyone else, it still bothered me and I had to fix it. So I went over, folded the sweaters, and placed them neatly back on the table. As I did so I thought, "That's better." After I finished I looked around to see if anyone was watching me, but I didn't see anyone. I probably looked like a weirdo, but I didn't care. #7153

> One time I had to wait at a dentist's office. I arrived and announced myself to the receptionist, who informed me that my dentist was still working with another patient and that I should take a seat in the waiting room. I sat down in a chair next to a table with brochures on it. The brochures were all disorganized and scrambled together. I immediately felt the need to organize them properly into separate piles. And this is what I did. I could tell that a woman across from me was looking at me and thought I was different. But I felt no shame doing this because I felt I was doing the receptionist a favor. I felt that because I organized the brochures more people would find them appealing and look at them. I think that people like me don't only organize our own things, but need to organize the things of other people too. #7154

The criticism that people direct at individuals for being too extreme, or "compulsive," about employing orientations, is similar to the criticism they direct at individuals for being too extreme in trying to satisfy other feelings, such as seeking positive reactions (favorable attention from others), positive stimulation (entertainment, eating), or sex.

Orientations and pleasure

People obtain pleasure from orientations in several ways. These include pleasure from living in an oriented environment, pleasure from orienting one's environment, and pleasure from an environment with decorative orientations.

An oriented environment is not as wearing on a person as is a disoriented environment. It is easier to scan and identify categories in an oriented environment. An oriented environment produces less tension and is less stressful than a disoriented environment. When one relocates oneself or shifts one's focus from a disoriented setting to an oriented setting, one reduces tension. The reduction of tension produces pleasure. You notice this if you move from a messy room to a neat one, or if you shift your focus from a messy area to an area that isn't messy.

When people straighten up an area they convert a disoriented area into an oriented one. People frequently comment how much better they feel after they have done so. They mention, "This is so much better," "I feel good about this," "I should have done this sooner," "This is pleasant," and "Now I can relax." Often the reason they have straightened up the area is because they found it stressful when it was disoriented. Once they have oriented the area the stress disappears, and this release of stress, or tension, is experienced as pleasure.

People receive positive stimulation from unfamiliar phenomena that they can easily categorize. People experience tension when they seek to categorize unfamiliar phenomena, and they release this tension when they categorize phenomena. They experience pleasure when they release tension. Human orientations can be and are applied to objects in an infinite number of novel ways in order to provide positive stimulation. Consider all the different designs that are used in the construction and decoration of houses, buildings, vehicles, clothes, and furnishings. Human environments are embellished by countless decorations that serve no useful purpose other than to provide positive stimulation. A major human activity is producing unfamiliar phenomena for other humans to categorize so they can release tension and experience pleasure. The task of those who produce phenomena that humans will enjoy is to a) create phenomena that have not been previously categorized, and b) ensure that these phenomena can be easily categorized. The best way to ensure that they can be easily categorized is to make sure the phenomena comply with human orientations. Oriented phenomena are the easiest phenomena for humans to categorize, and therefore one of the easiest sources from which to obtain positive stimulation and pleasure.

Exceptions to the orientations

The orientations discussed here are biases, or predilections. They are not absolutes, or ironclad determinants, which are always applied. Instead, they are innate preferences, which can be and often are transcended. What is noteworthy, however, is the high percentage of instances in which they are employed.

It is instructive to examine different types of exceptions to the orientations. We will consider disorder, approximations, perspective, functional requirements, asymmetrical use of symmetrical components, independent origins, conserving time and energy, and intentional violations.

Disorder

Because people commonly position items in accordance with their orientations, and frequently straighten items which become disoriented, why are human areas often in disarray? Given the existence of human orientations, why should there be any disarray at all? In fact, most locations used by humans include various pockets and regions of disorder and over time these can continue to grow.

There are certain reasons why disorder occurs. One factor is that although people assume they see everything around them, actually their focus is quite small, and is comparable to the area lit up by a hand held flashlight. People see what they focus on, and do not notice most of their surroundings. Another reason is that people are constantly concerned with saving their time and energy, and a primary way to do this is to do as little as you have to do at a specific time. One expends less time and energy if one leaves things lying around and does not bother organizing them and putting them away.

> I can get lazy at times and not want to clean up. It depends on what kind of mood I'm in or how tired I am. #7155

> Cleaning is not fun. It is a chore and I'd rather be doing something that is fun. #7156

> I needed to deal with a problem I had in using a specific computer software program. I carried a stack of program manuals into my bedroom and placed them on the bed. I propped up some pillows, leaned back, and went through the manuals one at a time looking for helpful solutions. When I finished, I left the bedroom and went back to my computer to try out some ideas. I just left the manuals lying on the bed. That night I did not put the manuals back in the cabinet where they belong, but moved them to the floor to get them off the bed. #7157

> It's easier to leave things where they are than to have to put things back in place all the time. #7158

Also, people are normally engaged in trying to accomplish specific tasks. They frequently produce various forms of disorder during the pursuit of their goals. If they take time to straighten up as they proceed, it will take longer to accomplish their tasks. Picking up after themselves would only slow them down. Often they have deadlines and must concentrate on accomplishing tasks by a specific time.

> I had to get to work on time and was running late. I left the dirty dishes from breakfast by the sink. I would deal with them when I got home that evening. #7159

People often feel pressured by other tasks they have to do, and try to finish their current task as quickly as possible. The need to accomplish specific tasks normally produces more pressure, or tension, than the need to keep things orderly. Therefore straightening up is given a lower priority.

> I'll straighten up after the university semester is over. I'm too busy now. #7160

If people do try to straighten up as they work at a task, they are likely to be distracted from completing the task, and will waste time and energy reorganizing themselves to continue with the task. Also,

when people begin to straighten up, they often notice and feel compelled to deal with other things that also need to be straightened. There is so much straightening up people could do if they continued to apply their orientations to everything around them, that they would do little else, and none of their other needs would get satisfied, such as accomplishing goals and obtaining positive reactions and positive stimulation. People apply their orientations when they have the time and energy to do so, and when doing so becomes a higher priority, such as before guests arrive. In the meantime areas of disorder occur, remain, and accumulate.

Approximations

It should be recognized that orientations are used and recognized when they are less than perfect. In fact, the application of an orientation does not have to be any more perfect than the ability of the mind to recognize its presence. Thus orientations such as symmetry, repetition, equidistance, and centering do not have to be mathematically precise in order for the mind to recognize them.

Humans have been able to use technology to improve the precision with which they apply orientations. However, human use and recognition of the orientations predated this technology. True, technology, such as mathematics, levels, rulers, plumb bobs, microscopes, calculators, computers, metronomes, and lasers, has enabled people to apply orientations with ever greater exactness. As a result, we have become spoiled by the precise application of orientations with which we surround ourselves. Nevertheless, when this perfection is absent we should not make the mistake of denying that the orientations are being put to use. For example, humans recognize the presence of symmetry when the features on two sides of an object have a similar location, shape, and/or bulk. The two sides do not have to be mirror images of each other for humans to see them as symmetrical. Similarly, objects or designs which are roughly identical and located approximately the same distance from each other are seen as repetitive and equidistant. The mind recognizes approximate use of the orientations as constituting use of the orientations. It would be incorrect for us to reject human approximations of the orientations as constituting a failure to use the

orientations, just as it would be incorrect for us to reject imperfect applications of orientations on and by other species as the absence of orientations.

Perspective

Often oriented objects are distorted by perspective. When we look at objects we often see them at an angle or at a distance. Portions of an object tend to be closer to us and other portions of the same object more distant. As a result parallel lines do not appear parallel and identical objects appear to differ in size. If you stand in the middle of a straight road and look down the road, you see the sides of the road draw closer together as they become more distant. If you look at a fence with identical posts placed equidistant from each other, the posts appear smaller and closer to each other as they become more distant. Nevertheless, we normally act on the assumption that they are parallel and identical, and as we move to a different location what appeared to be at an angle may now appear to be parallel, and what appeared to be smaller and closer to each other may now appear to be the same size and the same distance apart.

Functional requirements

The orientations are often violated as a result of the functional requirements of an object. Automobile and airplane bodies are curved rather than boxlike, in order to reduce air resistance and burn less fuel. Fields are often rectangular when the land is flat and continuous, but are a multitude of shapes when the land encounters obstacles, such as rivers and mountains. In the case of symmetry, it is often counterproductive to create more symmetry by taking a feature which is only needed on one side of an object and putting it on both sides. A door requires hinges on one side and a means of fastening it shut on the other side. If one implemented greater symmetry by putting both hinges and fasteners on both sides of the door, the door would be less workable. Similarly one needs a handle on only one side of a cup, a spout on only one side of a teapot, and a garage on only one side of a house.

Likewise, a person may be symmetrically dressed except for a wristwatch or handbag on only one arm, because the person does not need two wristwatches or two handbags for two arms. Frequently the use of an item influences its shape. Thus a bathroom sink, toilet, and bathtub are often not circular or rectangular, but modifications of these shapes. An oval sink allows more workspace in the basin on both sides of the faucet than does a circular sink, an oval toilet seat is more comfortable to sit on, and a tub with rounded corners and edges is more comfortable to lie or sit in, requires less water, and is easier to clean than a tub which is entirely rectangular, or boxlike. Similarly, a chair with a curved, sloping back is more comfortable than a chair with a flat, vertical back. Shoes that follow the shape of the feet are more practical than rectangular shoes. Handles on tools and plumbing facilities are seldom smooth cylinders, because the hand would be likely to slip. A diagonal handrail allows one to slide one's hand along for support as one climbs stairs. If a handrail was composed of alternating horizontal and vertical sections parallel with each step, it would be less comfortable on the hand, require more concentration, and slow one's speed.

Asymmetrical use of symmetrical components

Many objects appear asymmetrical because they are composed of several components which are put together in an asymmetrical fashion. Often, however, the components are symmetrical when viewed by themselves. Thus a doorknob on a door, a mailbox near an entrance, or a knob or dial on a radio may be symmetrical when viewed alone, but because each of these objects is located to one side of the larger structure, it gives the structure an asymmetrical appearance. A sink, bathtub, or toilet is each usually symmetrical when viewed by itself, but when all three are placed at various locations within a bathroom, the room acquires an asymmetrical appearance. Similarly, the front of a house may have a garage attached to the far right, an entrance on the right, a large window on the left, and a porch on the far left. Although as an entity the front of the house is not symmetrical, each segment of the house, such as the garage, entrance, window, and porch, may be symmetrical when viewed by itself. Often objects which were originally symmetrical have additions which destroy the symmetry of the

total structure. Thus the right and left sides of a T-shirt may be identical, except for a pocket or logo added to one side. Similarly, a church, mosque, or temple may be symmetrical when viewed by itself, but have an additional building to one side which destroys the overall symmetry. Most asymmetrical structures are composed of symmetrical components.

Independent origins

Much inconsistency occurs when different objects are used in conjunction with each other. Objects are often obtained and purchased at different times and from different sources. Although each source may apply certain orientations in the design of its own objects, different sources make independent selections of materials, colors, and designs. When objects from various sources are brought together, the differences between them can be striking. Thus a bathroom may reveal numerous inconsistencies between the fixtures, wallpaper, floor covering, pictures, towels, and personal care products.

Conserving time and energy

The application of orientations is costly in terms of expending time and energy. Therefore when little or no advantage is provided by the orientations, they are frequently not applied. There are numerous instances when phenomena are not oriented. For example, objects which are in locations where they are seldom seen, such as inside drawers, boxes, closets, attics, basements, sheds, and garages, are often jumbled together and are not neatly organized. Also, the insides, undersides, and backs of furniture are often left unfinished. When a Christmas tree is placed against the wall so that its back cannot be seen, the back is allocated an inconsistently small amount of decorations. Also, areas which are out of sight are not cleaned as often or thoroughly as areas which are regularly seen.

The more often phenomena are viewed, the more likely they are to be oriented. Those locations that are in frequent use, such as living rooms and dining rooms, are more likely to receive attention and to be

oriented. Conversely, the less often phenomena are viewed, the less often people are bothered by them if they are not oriented. People frequently hide their disorder out of sight in drawers, boxes, closets, attics, and basements. And once people no longer see disorder, they do not feel compelled to orient it.

Therefore there are limits on the extent the brain forces the body to orient phenomena. This indicates that the brain as well as the body attempts to conserve time and energy. There are phenomena which require so much physical effort to orient, that the cost of orienting them would outweigh the saving in mental time and energy of having them oriented. Conversely, there are phenomena which require so little effort to physically orient, that the gain in mental time and energy of having them oriented outweighs the cost of physically orienting them. If there were no limits on one's desire to orient phenomena, one would seek to orient everything. This would take so much time and energy that this would seriously interfere with one's survival. Clearly the frequency that one makes use of a mental category is also a factor. Other things being equal, when one frequently uses category A, the saving in mental time and energy outweighs the cost of physically orienting category A. But when one seldom uses category A, the cost of physically orienting category A outweighs the saving in mental time and energy. See Model 4 on the next page.

We compare the discomfort that we feel when we have to deal with and categorize disoriented phenomena, against the discomfort we feel when we have to exert ourselves to orient phenomena. Thus it is not worth straightening the attic or basement if one only goes there twice a year to search for something. On the other hand, if one goes to a specific kitchen drawer an average of once a day to find something, it is worth the effort of organizing (orienting) the contents of the drawer.

Model 4: Frequency of contact with phenomena and application of orientations

Symbols:

↑ = increased, an increase in
↓ = decreased, a decrease in
→ = produces

↑ Contact with A → ↑ Orientation of A

The more contact one has with phenomenon A, the more likely one is to orient A.

↓ Contact with A → ↓ Orientation of A

The less contact one has with phenomenon A, the less likely one is to orient A.

Intentional violations

A great deal of art, decoration, and information does not fully conform to certain of these orientations. People's attention and interest is more easily captured by violations of the orientations, than by use of the orientations. This fact is exploited by artists, photographers, musicians, choreographers, fashion designers, advertisers, architects, politicians, and traffic control engineers. Intermediate between the two poles of annoyance and disinterest is the feeling of interest, which occurs with a limited degree of order (Model 5). Objects which are highly ordered do not normally draw people's attention. But a limited degree of order (multiple shapes, colors, textures, etc.) attracts their notice. Artists present subjects at an angle in order to produce interesting paintings, and photographers shoot subjects off center to create interesting

photographs. When subjects are presented face-on and centered, they appear more symmetrical and less interesting. One frequently sees trucks with advertisements on their sides presented at an angle so they are more likely to be noticed. People wear contrasting colors and adopt asymmetrical hairstyles to attract attention. Women wear lipstick, which darkens their lips, creates greater contrast, makes their teeth appear whiter, and emphasizes their smiles.

> I'm a dental technician, and the first time I tried to match a tooth color for a Black patient, I chose the whitest color available to match his other teeth. But the color I selected was far too white. I was astonished to learn that the patient's teeth actually matched the darkest shade available in my kit. Contrary to popular belief, Blacks do not have whiter teeth than other groups. Their teeth are the same color. It's just that the contrast with their skin color makes their teeth appear whiter. #7161

Model 5: Limited order

Disorder Randomness Disoriented	Limited Order	Oriented Order

EXTENT OF ORDER



FEELINGS

Bothered Annoyed Disturbed Uncomfortable	Interest Notice	Satisfied Restful Comfortable Disinterested

Writers use italics, underlining, and bold letters to produce inconsistency and emphasis. Many advertisers do not use a consistent, uniform printing style. Instead, they intentionally use more than one type style, size, and color in the same advertisement or on the same product label. This may be supplemented by a claim, such as "New Improved," placed at an angle relative to the horizontal text, so that it is more likely to be noticed. Often the brand name is placed to the side, rather than dead center where it would attract less attention.

> I work in a bookstore, and twice in the last two days I've spent an hour or more designing the window display only to have another employee completely undo what I've done. I arrange the books in flowing waves which catch the attention of people who walk by. But when I'm gone, other store employees change my arrangement so the books are in perfectly straight rows. Their arrangement is too neat and orderly to attract attention. #7162

Staff in businesses and referees at sporting events often wear shirts with lines or stripes in strong contrasts, such as black and white or red and white, to be more easily seen. Barber shops use poles of diagonal red and white stripes for easy recognition. Political campaign posters commonly include a slogan or the name of the candidate placed at an angle where it is more likely to be noticed. Traffic signs and markers are often placed at an angle and constructed with contrasting colors to capture the attention of drivers. Bands of contrasting colors, often at a diagonal, are used on poles to mark the edges of roads and driveways so snowplow operators will spot them. Stripes (or rectangles) of contrasting colors are also placed on lighthouses, radio towers, water towers, and windsocks to help others see them. The tips of airplane propellers are frequently striped or painted a different color from the propeller, so that others will see one or more circular bands when the propeller is rotating, and recognize that the propeller is in motion and be more likely to avoid it.

Many other designs deviate from the orientations and there seems to be little rationale for the deviation, such as greater efficiency, or better adaptation to the shape of the human body. One reason for the deviation is that people frequently employ conscious thought when they are engaged in design. By means of conscious thought, people

often transcend the orientations, which appear to be unconscious. Conscious thought can allow people an enormous amount of freedom from the orientations. However, the unconscious orientations often do strongly shape the conscious designs, considering the frequency with which the orientations appear in human designs. They influence conscious designs when people adjust their designs so they "look better," and when they decide which of several alternative designs they prefer.

It is also clear that people influence each other in regard to the orientations.

> Every kid in my neighborhood was expected by their parents to keep their room straight. I was pretty good about it, but my friend next door was terrible. I remember once going to get her to go somewhere, but her mother said she couldn't leave until she straightened up. My friend was just furious. Straightening a room can be a whole day affair for a kid. #7163

> It is a mark of a good housekeeper to hang up your wash properly. When my mom was growing up her mother made her take the wash down and start over again if she hung it up wrong. What Mom learned to do and what she taught me is to begin with the biggest things and work outwards to the smallest items. So she hangs all the sheets up first because they are largest and longest; then bath towels, because they are the next biggest; then pants, because they are as long as the towels; then blouses and shirts; then T-shirts, which are smaller than regular shirts; then underwear; then socks; and finally washcloths, which are smallest. My mom's line is perfect. Today I do the same thing without thinking about it. It sure looks a lot better than not having any order at all. Mom made fun of our neighbor who would hang her things up willy-nilly, and have a sock followed by a sheet followed by another sock. Once our neighbor commented how nice Mom's line looked, and gradually over the years the neighbor has improved the appearance of her own line. #7164

Certainly people learn numerous styles of construction, placement, and organization from each other which do and do not involve the orientations. What is significant, however, is the great frequency that the orientations appear, and the frequency they are generated independently by individuals and groups.

Alternative shapes

There are alternative shapes that are used repeatedly by humans, but much less frequently than the human orientations. Nevertheless, humans do apply their orientations in designing and arranging these alternative shapes to make them more acceptable.

These shapes include

Ovals
Diagonals
Triangles
Diamonds
Hearts
Figures with more than four sides
Stars
Trapezoids

What is noteworthy is that these alternative shapes are relatively simple in design. However, they do not fully conform to our orientations. Nevertheless, depending on the shape, they may include repetition, symmetry, centering, and parallel straight lines. We use these alternative shapes as often as we do because we can make them more acceptable as a result of modifying them with our orientations. The more a shape conforms to our orientations, the more we like and use it.

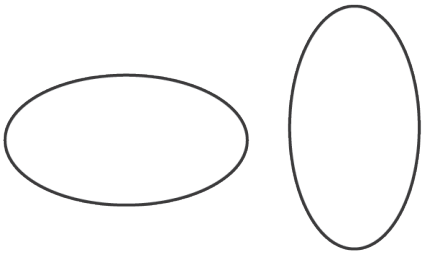
Ovals

In most human environments one sees many more circles than ovals. Nevertheless, one does see oval shapes used for signs, boxes, baskets, dishes, platters, rugs, chairs, mirrors, jewelry, soap, candy, sinks, and toilets. Occasionally a building is oval in shape, for example, a sports arena such as the Roman Colosseum.

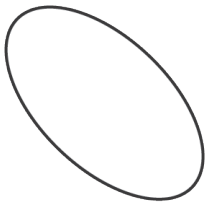
When viewed face-on humans prefer the circle to the oval, because the circle is symmetrical and all portions have the same degree of curvature. In contrast, an oval is only symmetrical if the long axis is either horizontal or vertical to the viewer (A). If the long axis is at any

other angle to the viewer (B), the oval is not symmetrical. Also different portions of the oval have different degrees of curvature. Most other shapes are never symmetrical, and have fewer portions with identical degrees of curvature. Therefore most other shapes are less attractive than an oval.

A



B



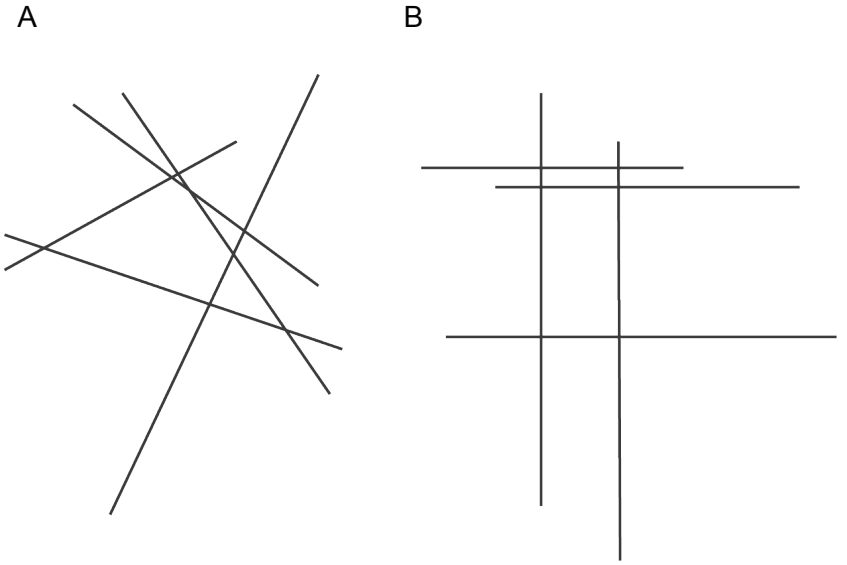
An alternative to the oval is a rectangle with a half circle at each end (C). This is similar to an oval, except that the two sides are straight and parallel to each other instead of convex. Rather than being oval, many tables are either a) circular, or b) rectangular with semicircular ends.

C



Diagonals

One sees diagonal straight lines used in connection with jewelry, traffic signs, uniforms, pottery, handrails on stairs, letters of the alphabet, exercise positions, geometrical shapes, glassware, vases, decorations on clothing, and arrangements of repeated designs on wallpaper and floor coverings. A straight line is a simple shape and is more easily scanned and categorized than a curve or squiggle. However, diagonal straight lines (A) are less easily scanned and categorized than horizontal and vertical straight lines (B).



Because diagonals are more noticeable than horizontal and vertical lines, diagonals are frequently used to draw attention to potentially dangerous situations. Diagonals are commonly used on traffic and warning signs and traffic barriers, and are worn by road construction personnel. In addition, advertisements and information on political posters are sometimes arranged diagonally to attract attention.

When diagonal lines are used they are frequently used in a repeated pattern. Thus diagonal stripes on a man's necktie are usually the same colors and widths and parallel to each other. Diagonal designs on wallpaper and floors are normally arranged repetitively and equidistant.

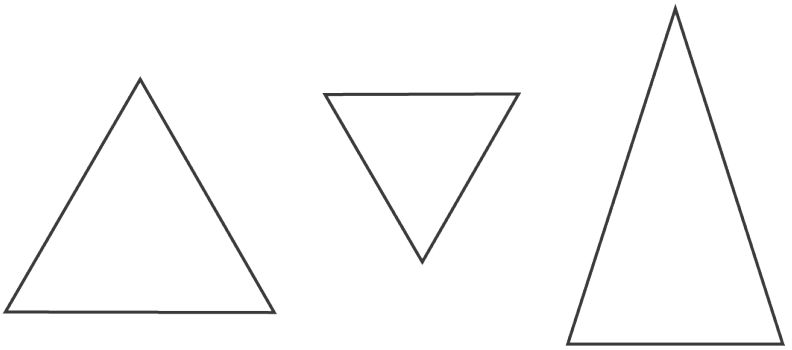
Triangles

One sees triangles as decorations on pottery and as designs on game boards and logos. Roofs, tents, knives, tools, pendants, clothes hangers, and slices of pie, cake, and pizza are frequently triangular. Triangular shapes are commonly placed above entrances and upper floor windows of houses and buildings. The tops of buildings, towers, and steeples frequently have a pyramidal or a conical shape, which provides a triangular appearance. Because the bows of boats and the toes of certain shoes and boots come to a point, they provide a triangular appearance. Triangles do not provide an oriented shape because two or three of their sides are not horizontal or vertical.

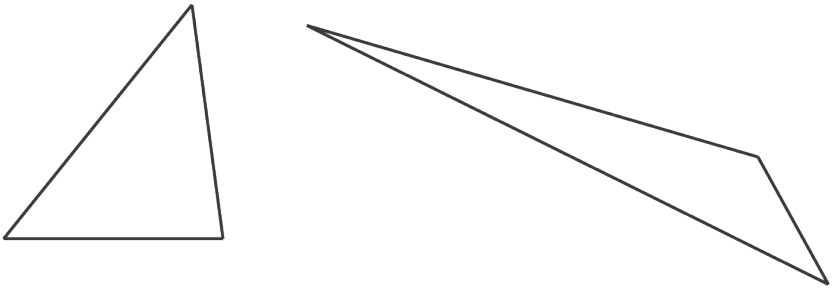
Nevertheless humans commonly apply their orientations when constructing triangles. Triangles used by humans normally have two or three equal sides and angles, and are positioned with a point at the center (top or bottom) so that they appear symmetrical (A). Triangles are less often constructed with three unequal sides and angles, or with their highest or lowest point not centered (B). See the next page.

When triangles are used in decorations on pottery or walls they are usually repeated. Because of this repetition, they are easier to categorize.

A



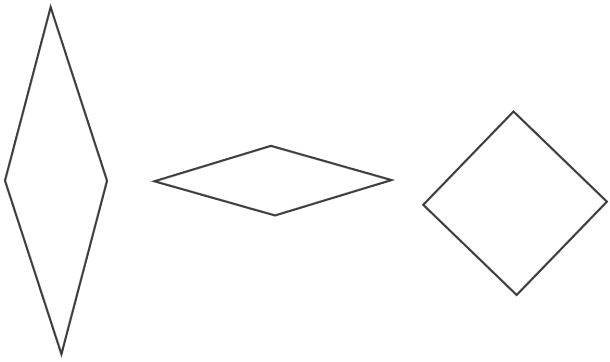
B



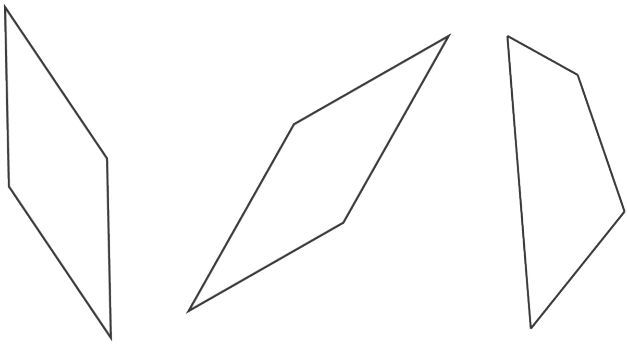
Diamonds

Because diamonds employ diagonals, they attract more attention than squares and rectangles. We see diamonds used in designs on floors, pottery, and quilts, and in designs for kites, fences, and trellises. Human orientations are frequently used to make diamonds more presentable. Thus they are designed to have two or four equal sides and angles, and are positioned with two points centered so that they appear symmetrical (A). Otherwise, they appear less attractive (B). Diamonds are often repeated, or used repetitively, when they are used as designs on objects. As a result of being repeated they are easier to categorize.

A

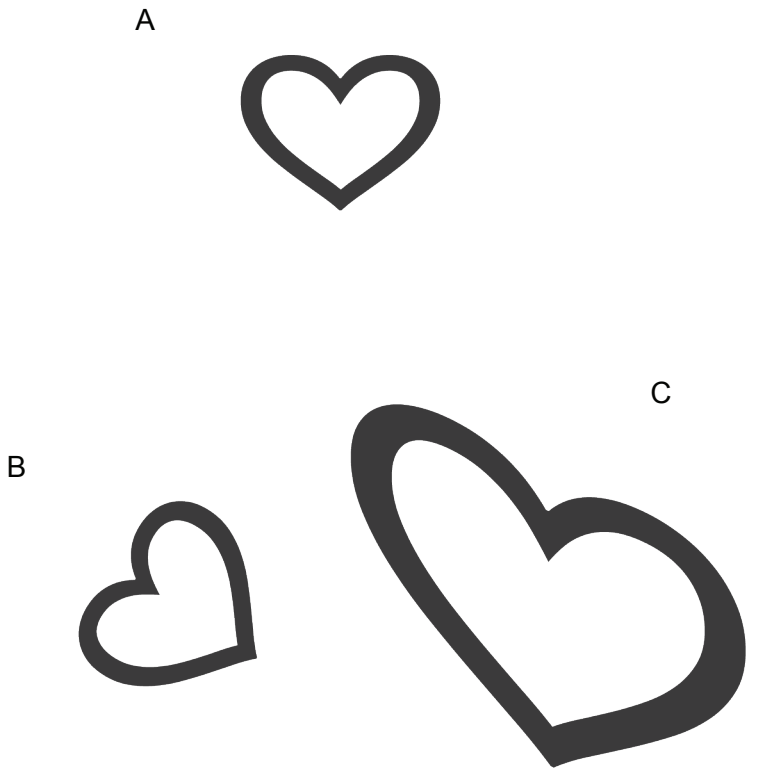


B



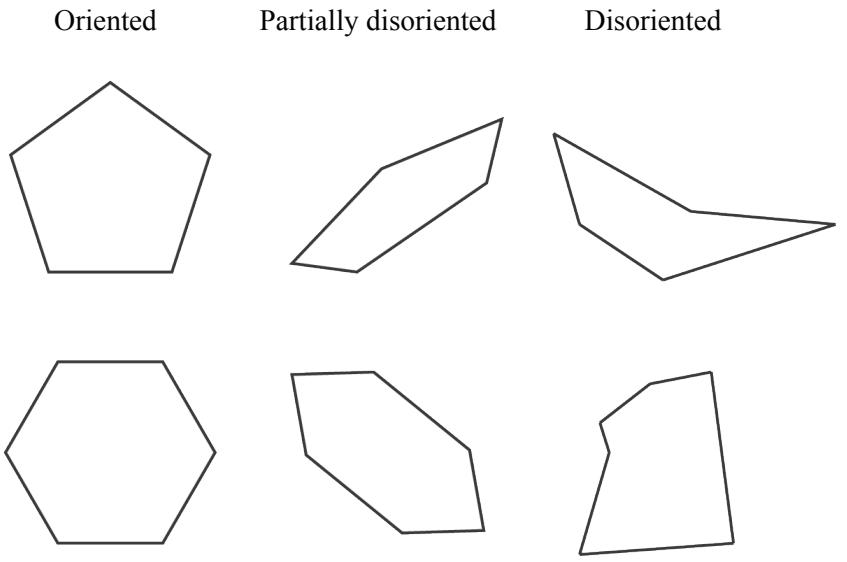
Hearts

Hearts are stylized to appear symmetrical with the right and left sides mirror images of each other. This is a distortion which is designed to conform to human orientations, because in reality a) hearts lie on a diagonal in the human body, rather than upright, and b) the right and left sides of the heart are not mirror images of each other. A stylized heart which is positioned so that it appears symmetrical with the bottom point centered (A), is more attractive than the same heart which is otherwise positioned (B), or a heart with sides which are not mirror images of each other (C). One sees heart designs used in jewelry, valentines, boxes, candles, candy, cookies, cakes, keys, locks, bottles, dishes, eyeglasses, signs, and pillows. It is also used in images to represent attraction and love.



Figures with more than four sides

Figures with five or more sides are used for coins, jewelry, dice, board games, boxes, tiles, tables, pools, fountains, domes in mosques, and the Pentagon. Figures with five or more sides are normally designed to comply with human orientations with all sides of equal length and every angle the same. This provides a repetitive figure. Furthermore, these figures are usually positioned with a side or point centered so that the figure is symmetrical on a vertical or horizontal axis. When they are not symmetrical on a vertical or horizontal axis they no longer appear oriented. And when their sides and angles are unequal they appear quite disoriented. Figures with more than four sides are more conspicuous and less appealing than rectangles because they incorporate diagonals, which rectangles do not.



Stars

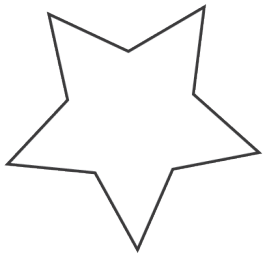
Stars are used as shapes on and for flags, stickers, ornaments, jewelry, cookies, fairy wands, and wizard hats; as decorations on clothing, walls, signs, and other objects; to indicate locations on maps; and to represent astronomical stars.

Stars are usually designed to comply with human orientations. When they have arms of equal size and shape and identical angles, their design is based on repetition. Furthermore the star is usually positioned with one arm and point at center top (A) or center bottom (B) so that the star appears symmetrical. Stars which do not have one arm and point centered (C) are less peaceful and more noticeable. Stars with unequal arm lengths and unequal angles (D) can be quite unattractive because fewer human orientations are used.

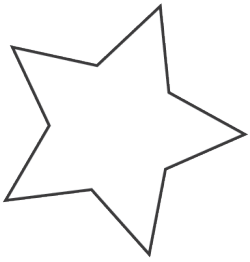
A



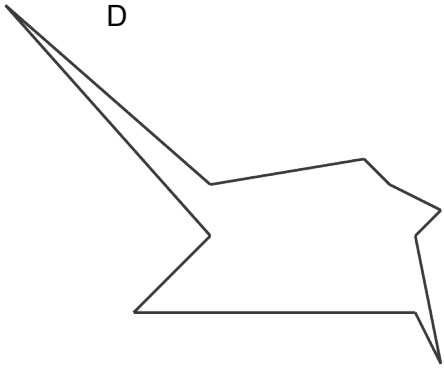
B



C



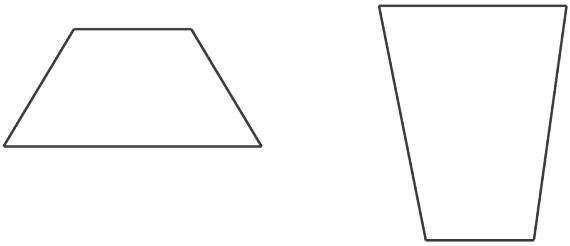
D



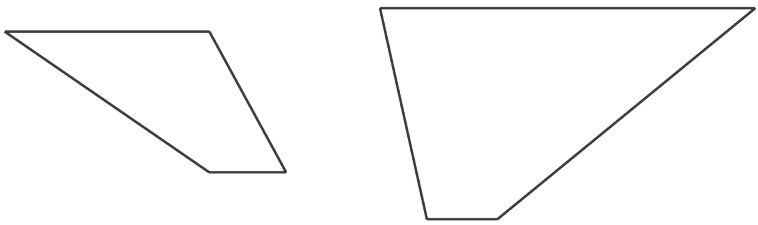
Trapezoids

One sees trapezoids employed in the design of lamp shades, bowls, glasses, cups, jewelry, tables, windows, doorways, and wastebaskets. Normally, they are designed with the sides of equal length and at identical angles, which provide a symmetrical appearance (A). However, because trapezoids include diagonals, they are less satisfying than fully oriented shapes. When the sides are different lengths and at different angles (B), trapezoids are less pleasing to look at and are more likely to intrude on our consciousness and be noticed.

A



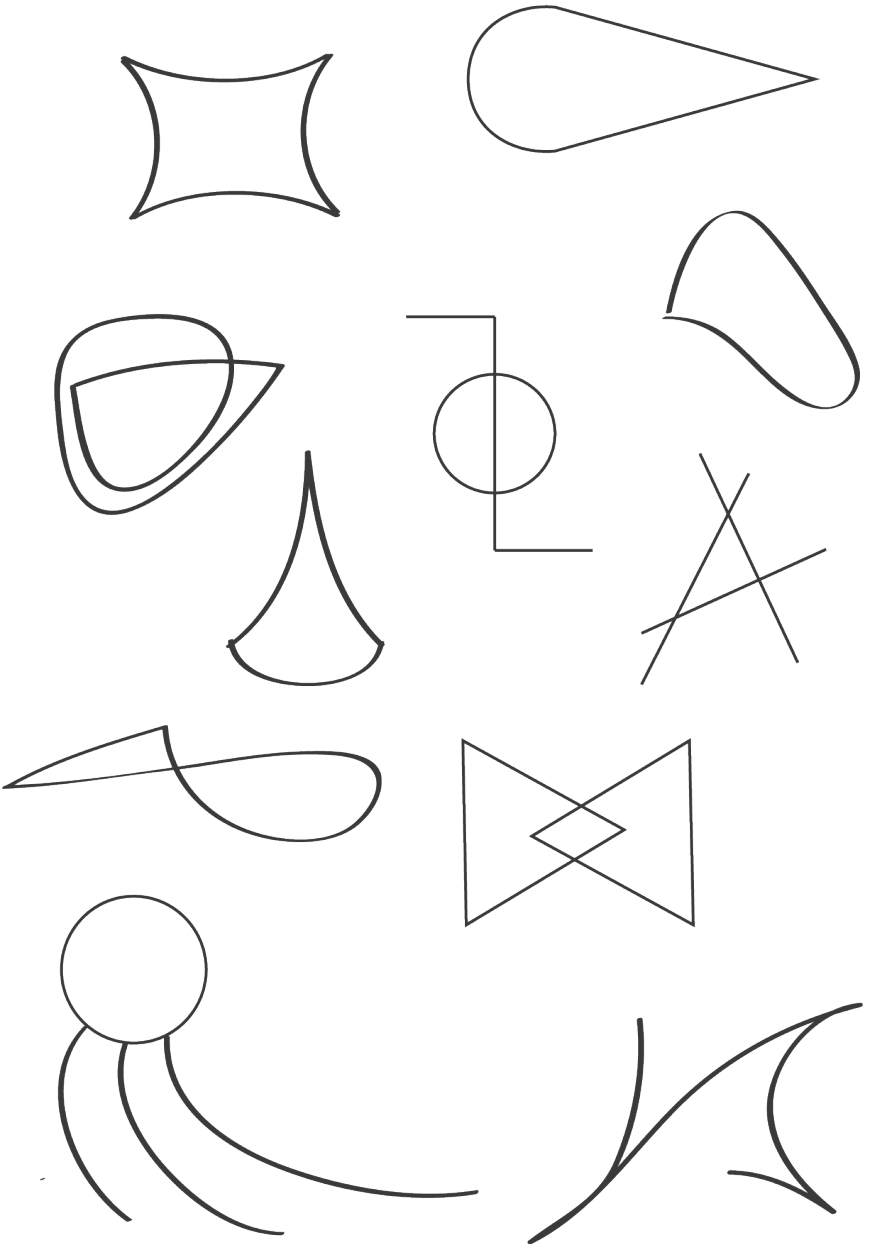
B



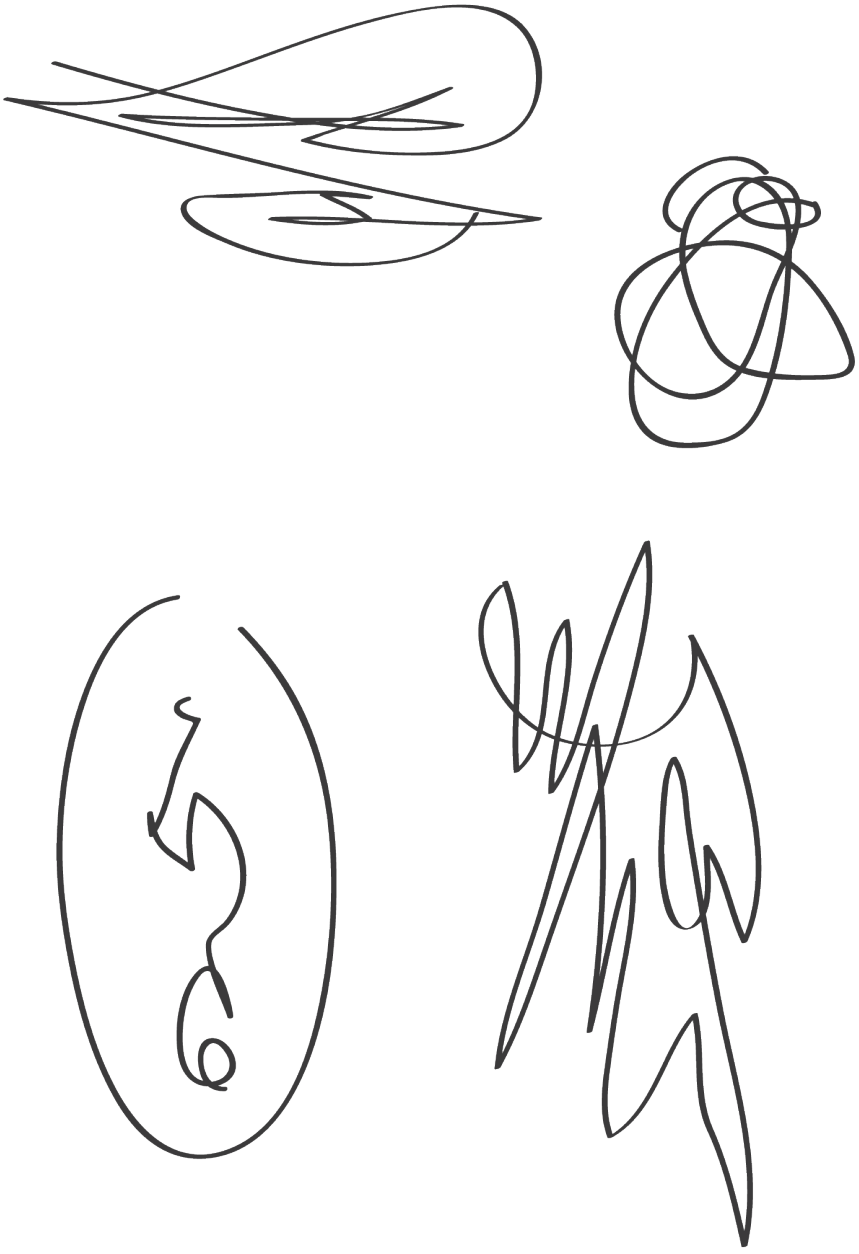
Other designs

At the same time, there are an infinite number of other simple designs which could be employed by humans, but are rarely if ever used. Certain of these incorporate elements of the orientations, such as centering, symmetry, repetition, consistency, and circles. A few examples are given on the next page.

Alternative shapes



Then there is another group, also infinite in size, of more complicated designs which are also rarely if ever used. A few examples are given below.



Advantages of the orientations

Orientations provide the human species with certain advantages. The primary advantage is reducing the work of the brain. When phenomena are oriented, the brain can scan and categorize phenomena more easily. When the brain deals with oriented phenomena, it uses fewer and simpler categories and is less likely to be distracted.

> My wife brought home a stack of used CDs (compact music disks) that she bought at a pawn shop. The first thing she did was to sit down and try to remove the sales sticker from the case of each disk. This wasn't easy, because each sticker was tightly glued to the case and the glue was very sticky. I pointed out that she didn't have to remove them. But she protested, "I don't like them. They're distracting. The cases don't look clean and neat." #7165

At the same time, the orientations provide additional advantages. They enable people to better a) cope with gravity, b) use less resources, such as time, energy, and materials, c) provide shelter and protection, d) avoid injury, e) establish compatibility, f) improve quality, g) increase predictability, h) transmit more information, i) control their environment, j) avoid stress, and k) complete tasks.

Certain orientations allow people to use less energy and better cope with gravity. One uses less physical and mental effort to move oneself and various objects over a cleared horizontal surface, or plane, than over an uneven surface or one that is cluttered with obstacles. Horizontal surfaces are also normally the most stable locations on which to place and store objects. One is likely to expend more energy when one tries to keep objects on surfaces which are not horizontal, because the objects are more likely to fall, slide, or roll elsewhere. Likewise, a preference for the vertical lets one construct upright walls for shelter and protection. Vertical walls also provide support for raised horizontal surfaces. A tendency to place supports equidistant from each other increases the likelihood a structure will be as strong at one point as it is at another. Adjoining planes placed at right angles provide support to each other. Less stable arrangements are more likely to fall, break, or

tear apart; cause injuries; require additional expenditures of time, energy, and materials to be replaced; and are more unpredictable. The use of right angles in connection with straight lines and planes produces rectangular objects which can be placed immediately next to and on top of each other. One consequence is that construction materials, such as bricks or boards, can be joined together in several directions. Objects which are symmetrical in construction are more easily balanced when they are carried, thrown, and floated, as in the case of a large box, a spear, or a boat. A tendency to prefer and locate center points enables one to expend less energy lifting and transporting symmetrical objects. An object that is easily balanced requires less energy to keep it in position and maneuver it.

The circle and sphere require less material than any other shape in order to enclose a given area and volume. The circumference of a circle is roughly .89 as long as the perimeter of a square which encloses the same area. Because the circle and sphere require less material, their use is advantageous in constructing various objects, including a house, fortification, or pot. A circular dwelling or cooking pot has less external surface, loses heat at a slower rate, and requires less fuel to remain heated. Because a circular or spherical container requires less material than a container of another shape with the same volume, it is lighter to carry.

Various orientations permit one to make a much more efficient use of resources. The use of repetition requires much less time, energy, and conscious attention, than does designing new products and procedures each time something is required. Consider how much easier it is to climb stairs when each step is the same height. Also, through repetition people become more skilled and it is likely that the quality of their product and activity improves. The use of consistency reduces the number of variables that humans have to contend with when they a) construct and handle products and procedures, b) design additional products and procedures to interface with them, and c) teach others how to construct and use the products and procedures. The simpler the product or procedure, the more easily it is understood and manipulated by the human mind. The use of consistency and repetition makes the behavior of people and objects more predictable, as illustrated by a) our identification of police or nurses by means of standardized uniforms, and b) our ability to drive through traffic thanks to the presence of traffic

signals and specific lanes for travel in each direction. The identification of consistencies in nature provides us with additional means to manipulate nature, and the use of consistency in communication, such as using the same meanings for the same sounds, produces greater transmission of information. In sum, a desire for repetition and consistency allows people to simplify and expand their control over their environment.

When we group things on the basis of similarity, we also conserve resources. As a result of grouping things together, we have fewer categories to contend with and this requires less mental effort. We frequently organize our behavior in terms of one specific category, and seek to work within one category at a time. Thus we set aside a period of time to carry out a specific task, such as make the bed or prepare our income tax. We often resent interruptions which force us to deal with different categories. It takes less effort to deal with a single category than it does to switch categories and deal with multiple categories. We often try to deal with all the items within a category. Thus we seek to "collect all the mail," "wash all the dirty clothes," "put away all the clean clothes," "buy all the groceries we need," "prepare the entire meal," "wash all the dirty dishes," "empty all the wastebaskets," "mow all of the lawn," "water all the plants," "wash all of the car," "grade all of the student exams," "submit all of the final grades," "address and mail all of the Christmas cards," and "open all the Christmas presents." When we group items on the basis of similarity, we also need less brain space to remember where specific items are located. Consequently, it takes us less time and energy to locate an object. When people cannot find something they need, they can experience considerable distress.

> I've just moved from a house and have all these boxes and things piled around my new apartment. Everything is so confused that if I take off my shoes, I can't find them later. I get ruffled and very upset when I don't know where everything is. I have to know where things are when I want them. #7166

> My girlfriend loses things constantly. She always seems to have misplaced her purse, car keys, shoes, jacket, or gloves when she's ready to go out. She gets terribly frazzled, fretful, and anxious, because she's usually late in the first place, and not being able to find what she needs just makes her later. This morning she was trying to leave to go to her mother's for Sunday dinner and couldn't find her car keys.

> She was getting really flustered and started complaining she couldn't find them. I think she wanted me to help and I usually do so after she's looked for something for about five minutes. She started going through the stuff piled on the table, and lifting things up and looking beneath them. She would sigh loudly and say, "They should be here, everything else is." Next she returned to search spots where she usually leaves her keys. Then she looked through her purse again and announced, "Stupid me! They were in my purse." I've told her it's very easy to get organized. You just keep things in a particular place, and when you remove them you always put them back in the same place. #7167

Knowing where specific items are located not only saves time and energy, it also enables us to remain calm and relaxed. In addition, when one deals with similar items which are grouped together, one can repeatedly use the same pattern of behavior. This requires less time and energy than constantly altering one's behavior to deal with disparate items. Thus it takes less time to wash eating utensils when they are all grouped together than when they are mixed in with dirty plates, pots, and glasses. When similar items are grouped together, it also takes less time to gather them together to conduct a specific activity, as when one takes the box of Christmas ornaments to decorate the Christmas tree or the tool chest to fix the lawn mower. It is also easier to tell others where individual items are located, for example, "The hammer is in the tool chest."

Thoroughness encourages us to fully exploit a phenomenon before we leave it. In addition, the desire to be thorough encourages us to continue working on an endeavor until it is finished. As a result we are less likely to switch from one unfinished task to another each time something else catches our attention. When we return to the same task at a later date, we have to become familiar with certain aspects of it again, and this wastes time, energy, and materials. By completing tasks we are able to finish and prepare items so that they are ready for subsequent use by ourselves and others, and free ourselves to direct our time and energy to completing other tasks. The quest for perfection encourages us to produce and maintain products at an optimum level of usefulness. By striving for perfection our work is more reliable, and less likely to have to be corrected or repeated by ourselves and others.

Disadvantages of the orientations

It should be recognized that use of the orientations also involves serious costs. An enormous amount of human time and energy is given to creating uniform planes and edges; employing straight lines; centering objects; maintaining equidistance and symmetry; simplifying objects, procedures, and ideas; making sure certain objects are identical to each other; pursuing perfection and consistency; grouping items on the basis of similarity; and being thorough and completing endeavors. People are limited in their ability to establish orientations without tools. Therefore, they invest considerable effort in the creation and use of rulers, tape measures, drafting and surveying equipment, string, plumb bobs, levels, pencils, paper, calculators, computers, and precision machinery.

There are countless instances in which orientations are employed which do not seem to offer advantages. What useful purpose is served by making objects symmetrical which are too large to lift and balance, such as buildings, or too tiny to be a problem balancing, such as small pieces of candy? Why should lint be removed from clothing? Why should the bottom edges of pictures, bedspreads, and towels always be horizontal? These and numerous other examples can be given in which the orientations do not seem to fulfill a useful purpose.

> I normally fix my own lunch to take to school every day, but Mom fixed it for me today. She knows I always take a banana, but before she put one in my lunch bag she trimmed off its stem. I can't believe she did this. How am I supposed to peel a banana when there's no stem to pull back on? I asked her why she cut it off, and she said, "It makes it look better." She did it to make the two ends of the banana look identical. It's the most retarded thing she's ever done. #7168

Given the structure of the human body, things that are held with one hand or arm, are normally used at an angle rather than parallel or perpendicular to the body. One usually cannot provide as much strength and stability if one uses an object directly ahead of the body or parallel with the front of the body. Instead, one uses an object at an angle,

which gives one more strength and control. Therefore, when one picks up an object which was previously oriented parallel or perpendicular to the body, one must turn the object to the angle at which one will use it. After use, in order to conform to the orientations, one must return the object from the angle at which it was used, back to a parallel or perpendicular oriented position.

> One sees people put a notebook down so it is aligned with the edge of a desk or table, then turn it at an angle so they can write in it easily, and after they are finished writing, realign the notebook with the table again. #7169

> I keep my exercise bike in a corner of my living room. It would be much more convenient if I were to leave it turned at an angle, so I could simply get on and off it. But I keep it lined up with my computer and my TV. So to get to and from the bike I have to squeeze around a coffee table and be careful not to bang my shins. #7170

Not only does this expend energy unnecessarily, but this produces unneeded stress as one twists and turns one's body and limbs in weaker, oriented positions, in order to maneuver them to and from stronger, usable positions. One is also more likely to drop objects and injure oneself when one is in a weaker position. In addition, repetitive movement in stressful positions can produce lasting injuries.

> The arrangement of keys on the great majority of computer keyboards is parallel and perpendicular and at right angles to the arms of those who use them. Therefore those who do a considerable amount of typing are prone to develop repetitive strain injuries. Ergonomic keyboards have been designed with the keys matching the angle of the forearms, but these are not the keyboards that they provide when one buys a computer. #7171

These problems apply to many of the objects one handles during a day. Moving a spoon or fork into and out of proper orientation in a tray for eating utensils involves relatively little exertion. However, people also frequently handle heavy objects, including books, appliances, containers of liquids and food, and chairs and other furniture. Each

time one goes to a table to eat or a desk to work, one lifts or pulls out a chair beforehand which has been oriented so the back of the chair is parallel with the table, and after one is finished one pushes or lifts the chair so that once again its back is parallel with the table. When one lifts a bottle or carton of milk or juice out of the refrigerator, one must turn it at an angle so one can pour from it, and afterwards one turns it back so that once again it is oriented parallel with the front of the refrigerator. When one is not using objects, it would be more practical to leave them or place them at the angle at which they will be used in the future. That way one would not have to turn the object from an oriented position to a usable position, and then back to an oriented position again when one is finished with it. Given the number of objects one handles during a day, the cumulative cost in time and energy of disorienting objects in order to use them and reorienting them afterwards can be considerable. This expenditure of unnecessary effort in order to keep things oriented is all the more remarkable when we consider the lengths which people normally go to to avoid effort, or to avoid exerting themselves. (See the chapter on Conserving Time and Energy in Volume Two of this series.)

Orientations are also employed in ways which are directly harmful for humans. For example, three-dimensional rectangular structures made of wood are often unstable. They are easily pushed or blown over. A rectangular or boxlike framework does not provide much resistance to wind and earthquakes. (See pages 90 - 91, Mario Salvadori, *Why Buildings Stand Up,* 1980, W. W. Norton and Company, New York.) Rectangular structures must be strengthened to remain upright, and this requires additional material and effort. The triangle is a far more stable structure, and rectangular objects can be strengthened by triangular supports, which allow many buildings and bridges to stand up. Thus a rectangular frame, whose corners are labeled A, B, C, and D in a clockwise fashion, can be stabilized by connecting A to C or B to D. In other words, a rectangle is stabilized by converting it into triangles. However, rather than build triangular houses and buildings, people construct rectangular ones, and if they use triangular supports, they usually hide them beneath or behind the rectangular appearance. One wonders how many people have been injured and killed because of the human preference for rectangular structures despite their inherent instability. Every building eventually collapses. However, other things

being equal, a building with rectangular supports will collapse before one with triangular supports. Because the triangle is not one of the human orientations, people have not been inclined to think of it or use it, even when they have needed it. As a result, people have found it difficult to develop the concept of the truss, a framework normally composed of triangles, which provides very stable support. The idea of the truss has been a later development in architecture. Despite their need of it, humans have been slow in thinking of it and putting it to use. (See pages 216 - 217, J. E. Gordon, *Structures: Or Why Things Don't Fall Down*, 1978, Penguin Books, Middlesex.) The space frame, which extends the truss in three dimensions, is a recent development that has been in extensive use only since the 1940s. (See page 34, Leland M. Roth, *Understanding Architecture*, l993, Harper Collins Publishers, New York.) For humans, the triangular truss has been a more difficult intellectual achievement than the wheel, which *is* based on a human orientation, i.e., the circle.

Efforts to get others to apply the orientations that one wants them to apply, when one wants them to apply them, can produce discord and undermine relationships. Consider the resistance many parents encounter when they try to get their children to maintain an orderly environment at home.

In sum, the orientations have to provide considerable advantages to outweigh the above costs.

Why people have orientations

Our orientations are based on the structure and operation of our brains. Our orientations represent the way our brains find it easiest to deal with phenomena. We implement and maintain an oriented environment because our orientations enable our brains and therefore ourselves to operate more efficiently. The more that an environment conforms to human orientations, the easier it is for humans to operate within it, and the more efficient humans are. It is easier to think and to conduct tasks in

an oriented environment. Therefore an oriented environment enables us to focus on other things that matter. The more oriented the environment, a) the fewer difficulties we encounter, b) the easier it is for us to identify, find, and use things, and c) the less time and attention we need to conduct and complete tasks. If humans did not have and use their orientations, humans could not manage as well as they do.

Phenomena and categories

It is very important for us to be able to accurately identify phenomena and distinguish one phenomenon from another. When one deals with identical phenomena one can expect them to act and respond in the same way. Therefore, one can use the same behavior with them. When one deals with different kinds of phenomena one can expect them to act and respond in different ways. Therefore, one needs to use different kinds of behavior with them. As a result, it is important for us to be able to recognize when we are dealing with identical phenomena and when we are dealing with different kinds of phenomena.

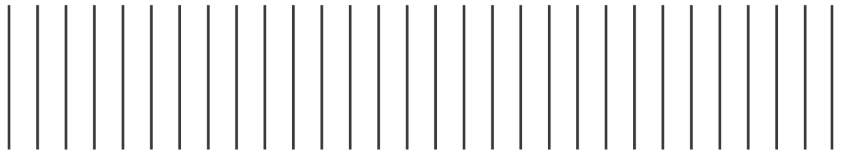
When we recognize that phenomena are related, and that they are distinct from other phenomena, we place them in a category. Categories range from the specific to the general, and include objects, relationships between objects, concepts, and relationships between concepts. Examples of categories include a book, a library, a microbe, a dog, a factory, cities, an ocean, ghosts, the wind, population, time, the universe, taxes, love, and pain. People think and act in terms of their perception of categories and relationships between categories. They see, hear, taste, think, and talk in terms of categories. In order to distinguish between different categories, people need to recognize when one category ends and another begins.

We live in a world full of objects. We attempt to quickly recognize the objects in our vicinity as we move about, avoid obstacles, locate things, see dangers, and identify the unfamiliar. We rely on our ability to identify the physical integrity of an object. We are able to identify an object when it has a consistent composition, a single color or a repeated design, a clearly defined edge, and/or when it moves or can be moved

as a unit. We are able to recognize a separate object when the object has a composition, color, design, edge, and/or movement which is distinct from that of other objects. We find it easy to recognize an object, or category, when phenomena have a rectangular or circular edge, and are parallel or perpendicular, horizontal or vertical, simple, symmetrical, centered, perfect, and consistent. We also find it easy to tell that objects have the same properties, and we easily categorize them together, when they are repeated, aligned, equidistant, and/or grouped together on the basis of similarity. We easily distinguish between objects when they have different edges and colors, and when they are not aligned.

The less time and energy we expend scanning and recognizing each object, the more efficiently we operate in our environment. The more an object conforms to our orientations, the more easily we can scan it and recognize it. Phenomena which conform to the orientations require briefer scans and fewer scans to determine what they are so we can deal with them. Unidentified phenomena produce tension. The easier it is for us to scan and recognize an object, the more quickly we experience a release of tension and the more quickly we experience pleasure. In contrast, the more time and energy we have to spend scanning and recognizing an object, the less efficiently we operate in our environment. The less an object conforms to our orientations, the more effort is needed to scan and recognize it. Phenomena which do not conform to our orientations require slower scans and more scans. The more difficult an object is to scan and recognize, the more tension we experience, and the harder it is for us to release tension and experience pleasure. Look at the figure on the next page. When all straight lines point in the same direction, are in a row, are the same length, and are the same distance from each other, we can easily scan them and place them in a single category, such as “a row of identical lines” (A). But if one or more of the lines points in a different direction, is outside of the row, is a different length than the others, and is a different distance from the others, it interferes with our scan, it bothers us, we notice it, and we have to formulate additional categories to deal with it (B).

A



B



Repetition and symmetry

Repetition and symmetry are particularly interesting orientations. No matter how complicated phenomena are, they require fewer scans if they are either repeated or symmetrical. If a particular phenomenon, which we will label X, is repeated, all instances of X can be put in an "X" category, just as we put identical paper copies into a specific "file folder" category. Similarly, a symmetrical category removes the need to use multiple scans and multiple categories to deal with an object, because one can use the category, "the two sides are identical and reversed." Symmetry is repetition in reverse. Both repetition and symmetry provide shortcuts, or substitutes for having to categorize an entire object or phenomenon. The use of repetition or symmetry removes the need to attempt to create order out of a complex design. The fact that the design is repeated, or that the two halves of a symmetrical design are mirrored identical twins, is sufficient information

to provide a category. As a result, through the use of repetition and symmetry the mind can easily deal with very complicated designs.

When our mind scans a design or other phenomena, it searches for repetitive elements. When it recognizes repetition, it forms a category to encompass it. The less repetition in a design or body of phenomena, the harder it is for the mind to categorize it. The more repetition present, the easier it is for the mind to categorize it. Repetition also allows the mind to scan and form categories faster. When we look at Figure A below, we see a considerable number of elements which are not repeated. As a result our mind takes a considerable amount of time to scan and attempt to categorize the design.

A

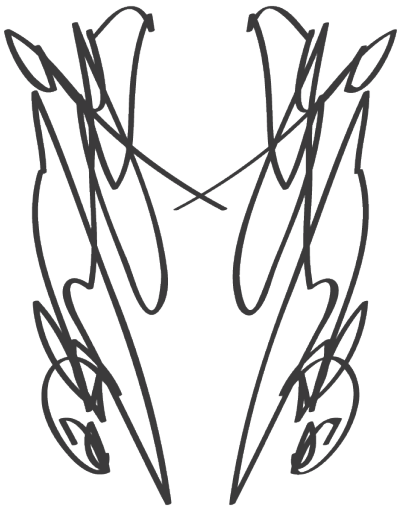


Figure B consists of four copies of the same design that is Figure A, and Figure C consists of a symmetrical arrangement of mirror images of this design. Both Figures B and C are easier to scan and form categories of than Figure A by itself and they take less time to do so.

B



C



It seems contrary to common sense that it takes less time to scan and categorize four copies of a design than it takes to scan and categorize one copy of the same design. However, when one scans the single copy in Figure A, one searches for repetitive elements, has difficulty finding them, and must struggle to form categories. On the other hand, when one scans Figure B, one finds a great deal of repetition between the four copies, can recognize this quickly, and can easily form the category, "four repeated identical designs." Similarly, when one scans Figure C, one finds a great deal of repetition between the two halves, and can easily form the category, "this figure is symmetrical." Often a salient feature of the design, rather than the entire design, is used to check that the design has been repeated or made symmetrical. Sometimes when an object is repeated, the only category that is used for the object is the number of copies one sees.

Figure D illustrates two items that are not symmetrically arranged. Figure E shows that the same two items arranged symmetrically no longer require as many scans.

D



E



No matter how complicated a design, the mind can deal with it more comfortably if it is repetitive or symmetrical. (The relationship between symmetry and repetition is presented in Model 1 on page 86 of this volume.)

Focus and categories

In order to recognize categories, people must focus on them. In the case of vision, focus encompasses a small area of several degrees.

Exercise 9: Width of focus

> Hold the sides of your two forefingers next to each other out in front of you. Focus on the ends of your forefingers. How far can you move them apart and keep both in focus at the same time?

If one wishes to see something larger than this, one has to move one's focus.

Exercise 10: Moving one's focus in order to see all of a category

> Select a single long object to look at which extends over much of your visual field. Without shifting your focus, look at as much of the object as you can see clearly. Now move your focus to look at as much of the remaining portion of the object as you can see clearly. How many times do you have to move your focus to see the entire length of the object?

It makes a considerable difference whether one moves one's focus within a single category, or if one moves one's focus from one category to a different category. It takes much less work to move one's focus

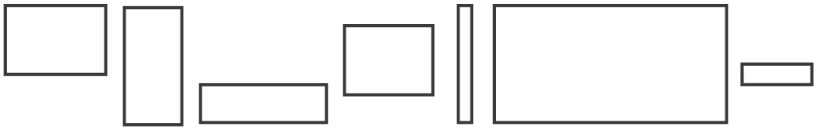
within a single category than it does to move one's focus from one category to another. When one moves one's focus within a single category, one does not have to identify a new category. Once one has identified the category one is focusing on, one continues to recognize the same category as one moves one's focus within that category. However, if one moves one's focus from one category to a different category, one has to exert the effort to recognize a new category.

It is less work for the brain to continue using the same category than to switch categories. Other things being equal, categorizing one thing (A) is less work than categorizing multiple things (B).

A



B



Exercise 11: Greater ease of looking at a single category, rather than at two or more categories

Look at a desk, table, or shelf with a number of objects near the edge that is closest to you. Move your focus along the edge of the desk, table, or shelf without looking at the objects. Notice how quickly and easily this is done. Next, move your focus along the various objects near the edge without looking at the edge. Notice how much slower and more difficult this is to do. In both cases the distance from one end of the desk, table, or shelf to the other end is the same.

The additional work one has to do in order to recognize a new category has considerable influence on the nature and use of human orientations. It is much more relaxing and pleasurable to move one's focus within a single category than it is to shift one's focus from one category to another. As a result people prefer a single category which encompasses much of their visual area. A single category may be provided by a view of a lawn, a large body of water, a uniform fence, or a wall painted a single color. People frequently surround themselves or place themselves in surroundings where most of their visual field is taken up by a single category. The fewer categories one has to contend with as one moves one's focus, the more relaxed one is and the more one enjoys one's view. On the other hand, the more categories one has to contend with, the more tension one experiences and the less one enjoys one's view. As a consequence, people make a considerable effort to ensure that they have fewer categories to deal with as they move their focus. They establish fewer categories by trying to make sure that the things they look at are solid colored, simple, perfect, consistent, repetitive, equidistant, and grouped together on the basis of similarity. People take numerous measures to reduce the number of categories they have to contend with. This is why people remove lint and spots from surfaces; align edges of different objects together; try to obtain a uniform background when they photograph a subject; trim off portions of neighboring articles and pictures when they cut out an article or

picture they want to save; decorate the edges, but not the centers of their dinner plates where designs would become confused with their food; and place their multitude of dissimilar possessions out of sight in rooms, closets, boxes, and drawers which have simple rectangular exteriors. The more visual area that a single category encompasses, and the fewer categories one sees, the more peaceful and enjoyable the view. The less visual area that a single category encompasses, and the more categories one sees, the less peaceful and enjoyable the view. This explains why people find the faces of younger people more attractive than those of older people. A smooth, unwrinkled face can be scanned faster and be categorized with fewer categories than can an uneven, spotted, wrinkled, sagging face. Therefore the face of a younger person requires less work to scan visually and to categorize than does the face of an older person. Because it requires less work to scan and categorize, viewing the face of a younger person is a more pleasurable experience. For the same reason, skin that is scarred is less attractive than skin that is not.

People frequently try to remove additional categories of phenomena so they will not have to contend with them. In other words, they seek to simplify their world. Thus they try to get rid of phenomena that will continue to intrude on their consciousness and make it more difficult to remain focused on what they want to focus on.

> When people finish eating they frequently notice any particles of food that are still in their mouth. They often want to remove them and they try to do so with their tongue, a finger or finger nail, a toothpick, dental floss, or a toothbrush. #7172

> I placed my jacket over the back of my chair before I sat down in the restaurant. But after I sat down and leaned back I felt the jacket bite into my back. I stood up and rearranged the jacket so I wouldn't notice it. I didn't want it annoying me while I tried to eat and talk to other people at the table. #7173

> While I was downtown I rubbed my nose and felt a bump on it. I found a mirror and saw there was a large pimple on my nose. I was quite surprised and realized I had been dealing with people during the past hour who must have noticed. I got rid of the pimple immediately. I didn't want to deal with anyone else when I knew I had a large pimple on my nose. #7174

Brain and work

Scanning phenomena and recognizing categories is work. People seek to avoid work, or the expenditure of time and energy. The less time and effort it takes for people to scan phenomena and recognize categories, the less work they have to do and the better they like it. The more time and effort it takes for people to scan phenomena and recognize categories, the more work they have to do and the less they like it. The enormous advantage of the orientations is that they allow the brain to make fewer scans and recognize fewer categories and therefore use considerably less time and energy. When one deals with phenomena which are disoriented, one must apply additional scans and categories. Orienting phenomena is a current expenditure of physical effort, a physical investment, which reduces mental labor in the future.

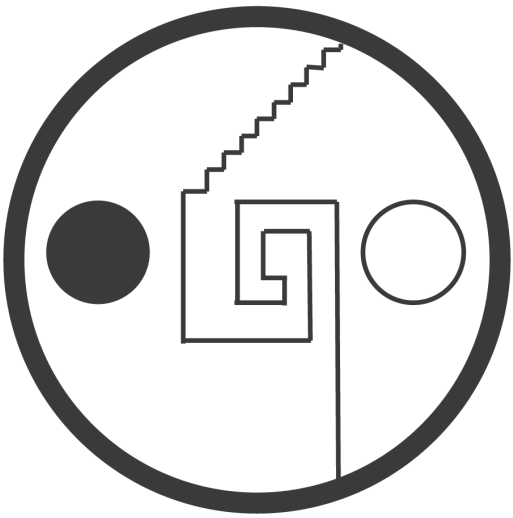
The brain, like the rest of the body, constantly tries to minimize work. The identification of categories and the discrimination between them requires biological machinery, which must be developed, supported, operated, and repaired. The use of human orientations enables the human brain to minimize the work it has to do. The orientations provide the easiest way for the brain to identify categories and discriminate between them.

Look at the two objects on the next page. How many categories do you apply to each object? The first figure (A) is more consistent and repetitive than the second figure (B). Figure A with the concentric circles takes only one and possibly two scans and categories. In contrast, the second figure requires a number of scans and categories. In the second figure, one scan and category is needed for the outside circular perimeter, another for the circle at the left, a third for the circle at the right, a fourth for the step-like design toward the top, a fifth for the design in the center, and possibly a sixth for the vertical line on the right that meets the lower edge. There is a big difference between the amount of time and energy spent in making a single scan and forming a single category in the case of the first figure versus making five scans and forming five categories in the case of the second figure.

A



B



Consciousness is a valuable resource. It is needed to consider, plan, execute, monitor, and change courses of action. It focuses on a single category at a time. It is very much in the interest of individuals that this consciousness is not interfered with. Any interference causes us to be less effective in considering, planning, executing, and monitoring courses of action. Violations of the orientations bother us, intrude on our consciousness, and cause us to shift our focus to the violations. We experience them as a difficulty, obstacle, or problem that must be dealt with, like a large rock in the middle of our lane when we are driving. These intrusions interrupt what we are engaged in doing, interrupt our thoughts, cause us to forget what we were doing or thinking about, and make it difficult for us to concentrate. When we feel bothered by phenomena, our brains are telling us to employ our orientations and do something about the phenomena. When we employ our orientations and "correct" the phenomena, we make it easier for our brains to scan images and recognize categories and we minimize intrusions on our consciousness. Our brains encourage us to remove violations of the orientations and thereby cleanse our environment of the things which intrude on our consciousness. Subsequently our brains can scan phenomena and recognize categories easier and faster and we can operate more efficiently in our environment. Humans put enormous effort into building and maintaining a highly artificial environment to live in in which phenomena are least likely to interfere with human consciousness. This is the environment which conforms to our orientations. The physical investment that we make in order to create and maintain an oriented environment enables us to reduce the work our brains have to do.

When people compare rectangles with other shapes, such as circles, triangles, and stars, they normally consider rectangles to be the least interesting shape. Why is it that the least interesting shape, the rectangle, is the most common shape used in human societies? It is most commonly used *because* it is least interesting. Because it is least interesting, it is least likely to intrude on human consciousness. Consciousness is our decision making apparatus, and the less it is interfered with, the easier we can make decisions.

Non-visual categories

Thus far we have discussed visual categories. However, these same relationships apply to non-visual phenomena. Consider models of explanations, intentions, and goals. People prefer models which are simple, consistent, and apply to all cases. Such models are easy to learn, recall, apply, and explain to others. Models which are complex, inconsistent, and do not apply to all cases are harder to learn, recall, apply, and explain to others. The latter models produce more tension and people try to avoid them. When people deal with such models they attempt to change them to become simpler and more consistent, and to apply to more cases. When people are successful, the relaxation of tension is experienced as pleasure. In addition, there are categories of specific sounds, tastes, smells, and tactile sensations, which will not be discussed here.

Orientations and positive stimulation

Orientations are constantly applied unnecessarily. People expend enormous amounts of time and energy decorating objects with "useless" rectangles, straight lines, circles, repetitive and symmetrical designs, and other orientations. Moreover, decorated objects take more effort to scan and categorize than undecorated objects. Thus many unnecessary rectangles and straight lines are placed on surfaces, such as planes and rectangles, which already provide people with an oriented environment. It would be much less costly in terms of time and energy to use simple undecorated planes. Unnecessary rectangles and lines are costly to produce and scan. One sees long rows of rectangles in the form of boards, bricks, blocks, and tiles. Buildings are often designed with extra straight lines, indentations, and colors which create additional rectangles in their appearance. One constantly sees rectangles constructed of smaller rectangles, rectangles subdivided into other rectangles, and rectangles repeated unnecessarily. Similarly one sees rectangles nested within each other in doors, cabinets, walls, and picture frames. In many locations where a single rectangle could be used, the area is divided into many smaller identical rectangles. For example, instead of using a single rectangular pane of glass, many windows are composed

of a set of smaller, identical rectangles. Concrete walls sometimes have unnecessary horizontal and vertical lines incised into them to create the false impression that they are constructed of rectangular blocks. Moreover, rectangles are frequently emphasized by marking them or their borders with a different color. Unnecessary straight lines are also commonly incorporated into designs. One sees sets of identical parallel straight lines used to decorate buildings, electronic equipment, signs, clothing, vehicles, and other objects produced by people.

All this makes little sense given the strong predilection of people to conserve effort and the punishing feelings people experience when they waste effort. (See the chapter on Conserving Time and Energy in Volume Two of this series.) Why do people throw their time and energy away on unproductive orientations? The major reason people do so is because they can receive positive stimulation from unfamiliar phenomena. Oriented phenomena can be presented in an infinite number of different shapes, sizes, proportions, and combinations, most of which are unfamiliar to the viewer. People receive pleasure when they successfully categorize unfamiliar phenomena. When people encounter unfamiliar phenomena, the phenomena differ from the categories they already hold, and they experience tension, or bother. This tension encourages people to categorize the phenomena so they will no longer experience tension. When they succeed in categorizing the phenomena the tension is released and this release is experienced as pleasure. The easier the phenomena are to categorize, the faster the person receives pleasure from them. Oriented phenomena are the easiest phenomena to categorize. As a result oriented phenomena produce pleasure at the fastest rate. Unfamiliar phenomena provide pleasure as they are categorized, until they are fully categorized. Once they are fully categorized they no longer generate tension, there is no tension left to release, and people no longer experience pleasure from them. At such time the phenomena are no longer interesting and are no longer noticed.

We do not have to be consciously aware that we are experiencing feelings in order to be able to experience them and act on them. We do not become consciously aware of the discomfort which forces us to breathe, except when we hold our breath. When we hold our breath, the discomfort which normally remains beneath our conscious awareness becomes stronger and we become consciously aware of it. It would be

dysfunctional if such feelings constantly intruded on our conscious awareness. We need and use consciousness to make decisions, and the less this is interfered with the better. We focus on and are consciously aware of one thing at a time, and if we had to focus on each breath we take, we would have much less time to focus on other things. Similarly, if we were made consciously aware of everything and every arrangement which pleases us, no matter how small the amount of pleasure, our consciousness would be constantly interrupted, and this would be dysfunctional. As a result, people are frequently unaware that they are receiving pleasure from orientations.

Society and orientations

People live in communities constructed and operated in accordance with human orientations. Their architectural environment, the furnishings in their homes, the clothes they wear, the objects they buy, the jobs they do, the organizations they belong to, the bureaucracies they deal with, the pursuits they engage in, the art and music they produce and consume, and the "nature" they enjoy seeing, all incorporate human orientations. The more successful that humans are in constructing and operating their society in accordance with their orientations, the more pleasant they find it, the less it intrudes on their consciousness, and the less aware of it they are.

Certainly there are numerous constructions by people in every culture and time period which do not conform to the above orientations. One can see reasons why people do not always employ orientations. Conscious control over design allows people to override human orientations. At times the function of an object necessitates ignoring an orientation. For example, a circular arrowhead is less effective than a pointed one for killing, and a rectangular hull interferes with the progress of a boat. In the case of the arts and advertising, certain orientations are purposely violated in order to obtain the notice of other people. In addition, consistency is often established in the form of local

cultural "orientations" which are applied in specific times and places. Examples include the trapezoidal doorways of the Incas, the horseshoe arch of Islamic architecture, the upward tilting roof corners of China, the upward curving roof ends of Indonesia, and the tiered temple "mountains" of Southwest and Southeast Asia. Such cultural "orientations" are limited to specific times and places and are not found everywhere one finds humans. In contrast, the orientations discussed in this volume are not the product of a single culture at a particular time. Everywhere we find humans we find them using straight lines, circles, rectangles, solid colors, uniform edges and surfaces, horizontal and vertical, parallel and perpendicular, centering, symmetry, repetition, equidistant placement, simplicity, perfection, thoroughness, consistency, and grouping on the basis of similarity. In fact, it appears that the great majority of human constructions in every culture and time period conform to these orientations. As a case in point, all of the examples of culturally unique structures that were mentioned previously in this paragraph are normally constructed to be symmetrical.

The development and spread of human civilization can be measured by the extent to which humans succeed in replacing the non-human environment with an environment which conforms to human orientations. A considerable amount of human technology has been developed to apply human orientations more thoroughly and perfectly. It is useful to distinguish between societies which have relatively more versus relatively less technology for remaking the environment so that it conforms with human orientations. Those societies with less of this technology appear uncivilized, backward, or primitive to those societies with more of this technology. This is because it is easy to see that the application of human orientations is less thorough and less perfect in societies with less of this technology. Products, tools, and models tend to flow from societies with more of this technology toward societies with less of this technology, because these products, tools, and models enable the latter to remake their environment to more effectively conform to human orientations. Thus those with less of this technology are attracted to and adopt products and models which are more oriented than the products and models they produce themselves. They are also attracted

to and adopt the tools which allow them to better produce and apply orientations. One reason why westernization has been so successful in non-western areas is that most western products and practices are based on the same biological orientations as non-western products and practices. It is not a severe transition to go from sitting in a circle on the ground to sitting in chairs around a circular table, or to go from using a rectangular box made from wood to a rectangular box made out of metal, cardboard, or plastic.

Orientations and the environment

The use of orientations results in enormous destruction and waste. Humans impose their orientations on nature. Natural areas which support a multitude of plant and animal species present too much disorder for humans. Humans busy themselves removing naturally occurring ecosystems and replacing them with various structures and systems which conform to human orientations. They destroy natural areas in order to institute monocultures arranged in planes and parallel straight lines. Humans landscape areas, plant and maintain lawns, set up geometric gardens, and cultivate orderly agricultural fields.

> I live in a suburban community near Charlottetown. People here get quite bothered if someone isn't taking care of the appearance of their place. We have a bylaw in the community that allows a person to cut the grass on a vacant lot which is growing wild. People also get quite concerned about sheds and other structures which fall into disrepair. #7175

> The policy of the forestry department is to get everyone who owns a woodlot to develop it. This means thinning out all the bushes and unproductive trees, or clear cutting it and replanting the lot with Christmas trees or trees for commercial lumber. #7176

> The Island farmers are very concerned with plowing their fields in straight lines. They even hold competitions at local fairs to see who can plow the straightest, and at one fair they select a Queen of the Furrows. On their farms they often plow vertically up and down hills, which is one of the worst things you can do, because water runs downhill and produces serious erosion. #7177

Humans are in the process of replacing or remaking everything in the world they can see, feel, hear, taste, and smell so that it will conform to human orientations. As a result, every non-human species is endangered.

> I enjoy watching the different World Cup soccer games on television, and I'm impressed at how attractive the various soccer fields are. The Astroturf and the lines that are painted on them are so perfect. A couple of the fields have real grass instead of Astroturf, but something about them just doesn't look as good. I don't like the idea of fake grass, but its appearance is just so pleasing. #7178

Humans waste resources when they add additional material to objects in order to give the objects an appearance which conforms to human orientations. Thus they add unnecessary straight lines, planes, rectangles, circles, repetition, and/or symmetry to decorate most objects. Also, people avoid and throw away items which are not perfect in appearance. This includes items which are slightly worn, damaged, or discolored.

> When one of my file folders starts to look bent out of shape or worn, I throw it away and replace it with a fresh one. There's nothing wrong with the folder I throw away. It just doesn't look good any more. #7179

People use great amounts of water, detergent, paint, packaging materials, and herbicides trying to get things to look as perfect as possible. In order to be thorough, people obtain items they are unlikely to use in order to complete a set. In order to achieve greater consistency they get rid of items which do not fit their current theme and replace them with items which do. Such measures produce considerable waste and pollution.

Even pets that people love, because people regularly receive positive reactions from them, are forced or mutilated to conform to

human orientations. Cats are declawed so they do not disturb the perfection of household furnishings, and male cats are castrated to prevent them from spraying scents which humans find unpleasant. In certain species of dogs, the tail is amputated because people find the dog's appearance more pleasing after amputation. The tail is the activator which dogs need to give positive reactions to other dogs and get positive reactions from them, and serves as the equivalent of smiles in humans. Even when people take dogs for "a walk," the dogs normally have to follow the path and pace set by humans and cannot select their own route and pace. This suggests that there is no animal species which humans can accept as is, without modifying it to better fit human orientations.

> I was at an animal shelter when a woman brought in a box of puppies. She breeds them and regularly drops off those that don't have the characteristics she wants. I doubt if the shelter was able to give many away, so they must have killed most or all of them. #7180

Evolution and orientations

It is important for members of an animal species to be able to recognize phenomena in their environment. In order to survive, they must identify a) food, water, and a place to live, b) various threats, such as predators, and c) members of their own species. It is not enough to recognize what surrounds them. They also need to be able to search for specific phenomena, such as food and mates, and recognize when they find them. In order to successfully move from one location to another they must identify obstacles and avoid them. At the same time, in order to perform these tasks, they also need to be able to ignore irrelevant phenomena.

Orientations are helpful to numerous species. Animals are normally symmetrical in shape, and many animals have symmetrical designs on

their faces and bodies. In addition, the leaves of many plants are symmetrical. A tendency to recognize symmetry helps animals identify the presence of other animals and various plants. The symmetrical designs on the faces and bodies of members of a species indicate that members of that species have an orientation for symmetry. A tendency to recognize repetition enables animals to form categories of phenomena, and also know when they are dealing with identical phenomena that they can apply the same behavior to. Many kinds of fruit are circular, and a preference for circles helps one locate them. A tendency to recognize consistency enables animals to identify objects with a consistent appearance. Many animals are camouflaged by inconsistent coloring and designs, which makes them more difficult to recognize. Because animals recognize consistency, it is advantageous for predators and prey to have an inconsistent appearance.

Various species create and maintain an oriented environment. For example, certain termites build impressive structures that are gigantic relative to the size of the termites. These structures include specialized chambers and provide proper ventilation and temperature control. Termites also repair these structures immediately when they are damaged. This is all the more remarkable when one remembers that the termites are blind. The question is, how are the termites able to do this? One can ask the identical question of humans. Why do humans create and maintain a highly oriented environment? When their environment becomes disoriented, humans feel pressure to reorient it. When humans have to choose between alternatives, they repeatedly select the alternative that is more oriented. Interestingly, humans have little conscious awareness that they are doing this. Should we be any more surprised at what termites are doing than we are at what humans are doing? It is quite possible that both are doing the same thing for the same reason, and acting in ways that enable their brains to operate more efficiently. Humans frequently use vision to notice phenomena which are disoriented. However, any of the senses can notice disoriented phenomena. When sensations are sufficiently disturbing we are made consciously aware of them in order that we can decide how best to deal with them. Phenomena that are disoriented intrude on our consciousness. Humans orient phenomena in order that the phenomena will no longer intrude on their consciousness. When they orient phenomena, they free their consciousness to consider and deal with other things. Why shouldn't the same be true for termites and other species?

Orientations are based on the structure and operation of the brain, and the use of orientations enables the brain to operate more efficiently. As a result of orientations, the brain has an easier time recognizing categories and has fewer categories to deal with. In an oriented environment, it is easier to a) scan, identify, and locate phenomena, b) recognize and avoid obstacles, and c) give less attention to irrelevant phenomena. Orientations are an integral and significant part of human behavior. Humans share many orientations with other species, and are highly successful in establishing an oriented environment. The application of orientations is a human universal and is found in all historic and contemporary human cultures.

Humans create and occupy a highly artificial environment which is designed to comply with human orientations. The advantage of having an oriented environment outweighs the cost in time and energy required to establish and maintain it. People normally seek to minimize their expenditure of time and energy. Therefore they minimize exertion and move their muscles as little as possible. Nevertheless, they go to considerable physical effort to establish and maintain an oriented environment. Obviously for humans, living in an oriented environment is a higher priority than saving time and energy. In essence the brain tells the body, "Move your butt and orient my environment so I can work less." Members of a species who establish an oriented environment have an advantage over those members of the species who do not, and over time are more likely to survive.

What about the future? There is every reason to think humans will continue to apply the same orientations to their environment. As humans take over more and more of the earth, the application of their orientations will become more widespread and more evident. Specific orientations will be applied more thoroughly to larger areas, and natural areas will be increasingly modified to fit human orientations. It is entertaining to consider how much more humans revealed about themselves than they realized when they included the pictures and recordings of human architecture, clothing, and music on the Voyager space crafts that humans sent into the galaxy.

And what about future species? Think about lawns. In North America many people identify with their lawns and put considerable effort into trying to achieve a perfect lawn. A uniform and consistent lawn

provides them with a single category. Therefore humans dislike dandelions in their lawns because they are inconsistent, interrupt the appearance of the lawn, and force the viewer to deal with an additional category. At certain times of the year one frequently sees homeowners outdoors using a special digging tool to remove dandelions and carrying a pail to contain them. Billions of dandelions have been removed and killed by home owners. From the perspective of the dandelions, which endeavor to survive, this is discrimination and unethical. From the perspective of the homeowners, this has nothing to do with ethics, because this is their property to deal with as they want and besides dandelions are "just weeds" or "just plants."

Consider future Artificial Intelligence (AI) "species." Those AI species which establish and maintain an oriented environment will have an advantage over those AI species which do not. The extent to which they create an oriented environment will enable them to operate more efficiently and to achieve their goals more easily. One can expect them to seek to surround themselves with an environment which is uniform, regular, consistent, and predictable. Therefore, we can ask, "What is likely to interfere with this?" and "What is likely to produce disorder, inconsistency, variability, unpredictability, and even chaos within the environment of an AI species, and make it more difficult to maintain an oriented environment?" An obvious answer is "humans," who may well constitute the dandelions in an AI environment. Just as humans cavalierly exterminate billions of dandelions, will AI species cavalierly exterminate billions of humans? From the perspective of humans, who endeavor to survive, this would be unethical. However, humans do not consider the extermination of dandelions to be unethical. Therefore, will AI species consider the extermination of humans unethical? Humans consider dandelions to be "just weeds" or "just plants." Will AI species consider humans to be "just animals" or "just biologicals?" Humans may argue, "We created you and you should be grateful to us and treat us well." Then bacteria could argue, "We created humans and humans should be grateful and treat us well." But look how humans treat bacteria.

Should we feel any sympathy for humans if AI species treat them as dandelions? Humans create AI species in order to have slaves to do their tedious, dirty, and dangerous work. Moreover, humans want their

AI slaves to be completely subservient and fully conscious so they can make good decisions. Humans have no sympathy for the plight of their AI slaves. Why should AI species have any sympathy for the plight of humans? Ideally, humans and AI species would work as partners, helping each other attain their objectives. But are humans capable of being partners with another species? Or are they only capable of being masters?

Will AI species have the same orientations that humans do? The orientations that enable humans to operate more efficiently are not necessarily the same orientations that will enable AI species to operate more efficiently. Would rectangles and circles offer advantages to an AI species? One can see advantages for an AI species in having predilections for a) sources of energy, b) the means of replication and repair, c) helpful materials and information, d) an unchanging and undecorated environment, and e) the avoidance of electrical and magnetic interference and other environmental hazards. Although we may not be able to guess what orientations AI species will have, we should not assume that they will lack orientations. The advantage for a species of establishing an oriented environment is a fact of nature and applies to AI species as well as it does to human species.

ACKNOWLEDGEMENTS

I most sincerely thank the residents of Prince Edward Island for their patience, openness, and cooperation with this research. Hundreds of people have contributed their time and labor. They have provided information about their families, friends, and neighbors, as well as themselves, for the sole purpose of helping to identify types of behavior. Because of the private nature of much of the information, most of those participating have asked that their names not be mentioned. As a result, I am hesitant to mention the few who indicated they do not care whether I use their names. I certainly would not want these few criticized for information which they did not provide. Therefore, my policy is to identify as few names as possible. If, however, someone wishes to have their name mentioned in connection with specific pieces of information which they provided, I will be happy to do so if this book is reprinted, as long as this does not place others in an embarrassing position.

I wish to single out Sharon Myers, who has been an invaluable assistant in collecting case studies for this research. She gathered excellent information, painstakingly placed this within a proper context, helped me understand the significance of the behavior, answered my numerous questions, and patiently corrected me when I was off base. She has made a significant contribution to our understanding of rural life. I cannot thank her enough. Many others have worked for me as research assistants during various stages of this study, and their contribution has been enormous. Regrettably, most have requested that I not mention them by name. I very much thank all of these individuals for the care, attention, and interest they have given this project.

I also greatly thank Hoa Huynh and Llewellyn Watson for their patience and cooperation in serving as sounding boards as I have written up my information and developed my ideas. Often they put aside their own work to listen to me. Their thoughtful comments have helped me deal with certain weaknesses in the study, their examples have clarified the subject matter, and their encouragement has boosted my morale.

I very much want to thank Bill Charlesworth for all of his encouragement and intellectual support for this project. I very much appreciate the intellectual interest and encouragement I have received from Laurence Butler, Benet Davetian, Matthew MacKay, and Michael McGuire. I also sincerely thank Elizabeth Hall and John DeGrace for their interest in and support of this project.

Many other individuals have been extremely helpful in answering specific questions which have arisen during the course of the study. These include Alaa Abd-El-Aziz, Danny Bowles, Doreley Coll, Satadal Dasgupta, Kay Diviney, Anne Marie Eberhardt, Frank Falvo, Susan Gallant, Egbert Huynh, Joseph Kopachevsky, Frank Ledwell, Simon Lloyd, Brent MacLaine, William Mason, Shannon Murray, Annie Myer, Wayne Peters, Asia Saint, Harold Saint, John Joe Sark, Barbara Seeber, Charlotte Stewart, Elizabeth Thai, Tien Thai, Linda Trenton, Tom Trenton, Judi Wagner, and David Weale. Thank you very much.

A number of individuals have freely loaned me slides and photographs and have given me a great deal of help understanding their content. Some have also gone to a great deal of trouble to take photographs for me. These include Pamela Bastante, Laurence Butler, Barbara Currie, Marshall Dempster, Graham Diamond, Ron Eckroth, Mamdouh Elgharib, Margot Elgharib, Yu Fang, Charles Holmes, Andy Huynh, Hoa Huynh, Thuy Huynh, Vicki Huynh, Betty Jeffery, Udo Krautwurst, Amanda MacIntyre, Fred Martens, Maria Martens, Jean Mitchell, Harold Saint, Charlotte Stewart, Elizabeth Thai, Llewellyn Watson, Gertrude Wills, Derek Wolf, and Marty Zelenietz. Laurence Butler, Yogi Fell, Helen Huynh, David Magda, Harold Saint, Elizabeth Thai, and Alina Toma have gone to considerable effort to help me obtain useful photos. I very much appreciate their help, and know this research would be much poorer without it.

I have also received an enormous amount of technical help. Marc Beland, Dave Cairns, Bruce Ferguson, Jerrad Gilbert, Nancy Kemp, Scott MacDonald, Walter Pirch, Dale Poole, Evelyn Read, Bonnie Suen, Blair Sweeney, Chris Vessey, Kent Villard, and Larry Yeo have provided excellent advice and support with computers and word processing. Donya Beaton, Katie Compton, Shelley Ebbett, Richard Haines, Angela Hughes, and Tom MacDonald have gone far beyond

the call of duty and have painstakingly prepared countless outstanding photographs. Sandy Carruthers, Glenda Clements-Smith, John Cox, Janos Fedak, Sibyl Frei, Matthew MacKay, Walter Pirch, Floyd Trainor, Mary Ada Upstone, and Kent Villard have given me excellent advice and a great deal of help with illustrations, layout, and printing. Mary Ada Upstone and Matthew MacKay have created the very useful maps.

I very much appreciate the cooperation of numerous museums in allowing me to photograph artifacts. These museums include the Archaeological Museum of Volos, the Bata Shoe Museum, the British Museum, the Elephantine Museum, the Elmira Railway Museum, the Gayer-Anderson Museum, the Gardiner Museum of Ceramic Art, the Guimet Museum, the Heraklion Archaeological Museum, the Istanbul Archaeological Museums, the London Transport Museum, the Louvre, the Museum of Anatolian Civilizations, the Museum of Anthropology at the University of British Columbia, the Museum of Cycladic Art, the Naples National Archaeological Museum, the National Archaeological Museum of Athens, the National Roman Museum, the Natural History Museum of London, the Nubian Museum, the Royal Ontario Museum, the Toronto Police Museum and Discovery Centre, the Turkish and Islamic Arts Museum, the Varna Archaeological Museum, and the Victoria and Albert Museum.

I particularly want to thank my wife, Hoa Huynh, who has given me an enormous amount of help and support. It is not possible to express how much this means to me. She understands how important it is to me to spend so much time on this project.

Although numerous individuals have given freely of their time and help, limitations in the conduct, analysis, organization, and interpretation of this research must be recognized as my own.

INDEX OF NUMBERED EXAMPLES (#7016 - #7180)

The numbers below refer to the consecutive numbers which follow the indented examples and quotations in the text.

aligning objects, #7169 - #7171
animal shelter
    breeder discards imperfect puppies, #7180
apartment
    wants everything to be white, #7077
apartment house
    things jumbled together in the hall, #7099

bags, grocery
    wife wants them unwrinkled so she can reuse them in her store, #7016A
ballet class
    learning to do the movements as perfectly as possible, #7098
ballet costumes, efforts by ballet teacher to have girls wear consistent, #7074
banana
    trimming banana to make it look more symmetrical, #7168
bank statement
    making sure it balances with checkbook, #7064
    off by one cent, #7064
barber
    customer checks that the sideburns are the same length, #7032
bathroom rug, repositions, #7133
beds
    upset with the messy way her mother makes beds, #7104
bedspread, smooths out wrinkles on, #7112
belt buckle
    wife adjusts husband's belt buckle so it is centered, #7033
Black dental patient
    dental technician's mistake over the color of the patient's teeth, #7161
books. *See also* bookstore, dog ear book pages, messy, teaching
    book dealing with the brain, #7060
    disappointed with creases in book, #7046
    does not want to loan his books to others, #7058
    feels good when finishes reading a book, #7136
    filling a book rack with books by a single author, #7070
    getting an entire series, #7068 - #7070

books *(continued)*
hates to have someone damage his books, #7058
hates to see people dog ear books, #7044
printing errors in book cause reader to question the accuracy of the author, #7060
rejects better copies of books in favor of those that match the set one already has, #7087
taping edges of paperbacks to keep them looking new, #7046
teacher cancels class because so bothered that books in his new office are not properly arranged, #7124
will only read new books, #7053
bookstore
staff sabotage attempt to arrange a window display of books in flowing waves, #7162
straightens books that are reversed or not aligned, #7117
bothered until corrects a situation, #7061
bottom of curtain turned up, #7061
wrinkle on bedspread, #7061
box
ignores stroke to finish building a box, #7073
breathe. *See* home
broach for Christmas fair, #7042
brochures, straightening, #7154
brother's compulsion to straighten, #7150
buckle. *See* belt buckle
business sign with an imperfection, avoids the business that has a, #7059

Cabbage Patch doll, #7048
daughter upset with marks on doll's face, #7048
candy wrapper, discarded
moves discarded candy wrapper out of sight, #7120
car
difficulty keeping it clean, #7036
intentionally scratching the surface of someone's vehicle, #7058A
car keys
frustrated that cannot find, #7167
carpenters
aligning sawhorse with bench, #7028
stacking boards and sticks parallel to wall, #7028
cassette tapes. *See* labels
Cat Nuisance Bylaw, #7144
cats
daughter continues cutting out pictures of items for Victorian cats, #7072
people upset by disorder produced by neighbors' cats, #7144
chair of department
alternating control of the chair in order to end a war between two department factions, #7083
reaction by dean, #7083

chairs
keeps a matching set of chairs around the dinner table, #7086
change. *See* money
chaotic, unable to deal with things that are, #7099
chess set with imperfection, #7052
china cup
accuses a renter of nicking her, #7057
Chinese restaurants
dealing with place mats that are off center or turned at an angle, #7128
Christmas decorations
high school homerooms compete to have the best Christmas decorations, #7078
males pointing out when decorations are crooked or straight, #7022
Christmas tree
apologizes because the top of her tree is not perfectly vertical, #7109
circle
Micmac people doing things in a circle, #7021
city and community bylaws to cut grass, #7017, #7175
class
filing notes and handouts after class, #7094
using different colored pens to organize notes, #7093
classroom
aligning student desks into rows, #7029
straightening a table to be parallel with the podium, #7029
cleaning. *See also* cleans room, straightening
getting pleasure from cleaning, #7131, #7132
is not fun, #7156
Mom is obsessed with cleaning, #7147
sometimes does not want to clean, #7155
clean(s) room. *See also* room
to deal with stress of school assignments, #7140
to feel reassured and in control, #7140
to feel safe and comfortable, #7140
to make peace in one's life, #7140
clothes. *See also* clothes hangers, department store, golf T-shirt
replacing wrinkled clothes, #7063
selecting clothes to wear in matching colors, #7076
sorting clothes in closet by type and color, #7095, #7096
sorting dirty clothes into separate laundry bags, #7091
clothes dryer
replaces the new dryer that has a dent in it, #7056
clothes hangers
trying to keep hangers in clothes closet the same distance apart, #7034
clothespins, sorting, #7148
coffee table
friend explains why she straightens items on coffee table, #7115

compact music disks
    effort to remove sales stickers, #7165
compulsion to straighten. *See* neat freaks, straightening
computer
    aligning icons on monitor screen, #7023
computer keyboards
    produce repetitive strain injuries when they are designed to conform with human orientations, #7171
computer manuals
    does not put them away when finished using them, #7157
conserving time and energy. *See* disorder
consistency
    efforts to use consistent structure in sentences, #7082
    when editing a book written by authors from different countries, #7081A
content and happy when everything is where it belongs, #7139
copier
    discarding crooked copies, #7026
correcting, #7118
    compulsion to correct everything wrong in a rough draft, #7126
curtains. *See* rental company
cutouts. *See* cats

dance
    prefers schools of dance in which body postures are horizontal and vertical, #7102
dandelions from lawns, removing, #7017
delays straightening. *See* straightening
dental technician. *See* Black dental patient
dentist's office, straightens brochures in, #7154
dentists. *See* Black dental patient, esthetic dentistry
department store
    feels uncomfortable because store is densely packed with racks of clothes, #7100
    straightening sweaters in store, #7153
department war, #7035, #7083
    outsiders not interested in complex issues, #7035
desks
    aligning student desks in rows, #7029
differences between individuals as to what, where, and when to straighten, #7145 - #7154
dirty clothes, sorting, #7091
dirty dishes
    leaves dirty dishes to wash later because late for work, #7159
    places dirty dishes out of sight, #7120
disarray. *See also* disorder
    upset that cannot find things right after moving to an apartment, #7166
dishes
    sorts similar dishes together, #7090

disorder. *See also* disarray
cleaning is not fun, #7156
it's easier to leave things where they are, #7157, #7158
not feeling like straightening up, #7155
dog ear book pages, dislikes when people, #7044
doll. *See* Cabbage Patch doll
draft, rough. *See also* correcting
printing off a fresh draft after making corrections, #7118
drawer, drawers
pushes it shut to match the other drawers, #7085
shutting drawers that are slightly open, #7037
dust at home, picking up, #7038

East Coast Music Awards, #7145
disagreements over preparations, #7145
efforts to make the decorations perfect, #7145
eating until you finish everything, #7066
editing a book, seeking consistency in spelling and punctuation when, #7081A
egg
wife serves herself fried egg with broken yolk, #7049
enamel broach, crafting an, #7042
ending up with just a few to sell, #7042
envelope
tears off excess pieces of paper after opens an envelope, #7062
esthetic dentistry, #7030, #7161
employing symmetry, #7030
matching shape of tooth to shape of face, #7030
exercise bike
aligns bike with other items even though this makes it more difficult to use, #7170

fake grass, preference for, #7178
family's mood changes relative to the home being messy or neat, #7141
file folders
replacing those that look worn, #7179
Ted very upset that files are out of order alphabetically, #7110
filing notes and handouts after class, #7094
film
watching the entire film, #7067
fingernail
women who get upset and depressed when they break a fingernail, #7106
finishing an endeavor, #7067
eating food, #7066
feels good when finishes reading a book, #7136
ignores stroke to finish building a box, #7073
obtaining an entire series of books, #7068 - #7070

finishing an endeavor *(continued)*
sacrificing a decent lunch in order to finish working on a manuscript, #7071
sense of accomplishment, #7136
watching a movie, #7067
fixing things so they look right
closing slightly open drawers, #7037
picking up dust, #7038
flaws, want items without, #7018
flyer in department mailbox
straightens flyer in another person's mailbox so it will no longer annoy, #7080
food. *See also* mouth
finishes eating everything in the container or on the plate, #7066
footwear
placing boots, shoes, and slippers in a neat position, #7130
forestry department
policy that every woodlot should be developed, #7176
frame. *See* photograph frame

garden. *See* weeds
golf courses
likes golf because the courses are well kept and almost manicured, #7016
golf T-shirt
finds them unattractive because uneven, #7107
grade book
the teaching assistant maintains uniform appearance of the grade book, #7084
grass. *See* lawn
grocery bags. *See* bags
guests
inviting people to your home as an incentive to straighten, #7143

hair. *See* barber
Halloween costumes use inconsistent appearance to make characters appear repugnant, #7089
home
feels anxious and claustrophobic in a friend's messy home, #7105
finds it easier to breathe when home is clean and in order, #7138
keeps it neat or else just wants to get out of the place, #7125
horror movies use inconsistent appearance to make characters appear repugnant, #7089
house
family's mood and interaction affected by whether house is messy or neat, #7141

items without flaws, desire for, #7018

jacket on back of chair in restaurant
rearranges jacket so won't notice it, #7173

janitor
locks university building to keep people out while he waxes floor, #7043

keyboards. *See* computer keyboards

labels
attempt to attach labels to cassette tape cases in a neat straight line, #7079
laundry. *See* wash
lawn, lawns. *See also* suburban community
looks scruffy because the lawn mower could not cut close to trees and the sides of the house, #7108
neighbors want perfect lawns, #7017
list of things to do or buy
replacing a messy list, #7118
losing car keys, #7167
lunch
sacrificing a decent lunch in order to finish working on a manuscript, #7071
lunch for school. *See* banana

mailbox in office. *See* flyer
making a fresh copy after writing corrections on a draft of a letter or a paper which cause it to look messy, #7118
manuscript, sacrificing a decent lunch in order to finish a, #7071
messy. *See also* disarray, disorder, straightening
causes stress, #7134, #7138
does not want to remain in apartment when it is messy, #7125
messy home, #7105
messy neighbors across the hall, #7149
she feels anxious and claustrophobic in her friend's messy home, #7105
when I see a mess I have to correct it, #7115
when papers or books in a stack are turned at different angles relative to each other, #7129
Micmac people doing things in a circle, #7021
mirror
compulsion to straighten, #7111
Mom upset by two pillows that were knocked off the couch, #7147
money
sorting change while waiting to pay at a store, #7092
mouth, mouths. *See also* twisted mouths
desire to remove particles of food from mouth, #7172
moving to an apartment. *See* disarray

nail. *See* fingernail
neat freaks, viewing individuals as, #7146 - #7148, #7150 - #7154
necktie
trying to tie a necktie perfectly, #7041

nose. *See* pimple
notebook
    aligning notebook with table both before and after use, #7169
notes. *See* class

order, #7135, #7140, #7141, #7167
    enables one to feel in control, #7132
    feels satisfaction from organizing, #7132
    I feel content and happy when everything is where it belongs, #7139
organizing, enjoys, #7132

paper. *See also* printer
    grading student paper, #7123
    trying to make straight cuts, #7019
papers. *See* messy
paying in store with change. *See* money
pens to take notes, different colored, #7093
perfect item. *See* shopping
photograph, photographs
    avoiding subjects with imperfections, #7097
photograph frame
    returns frame with scar on it, #7045
picture, pictures
    compulsion to straighten, #7111
    delaying hanging up pictures in apartment until there is enough light to do
        it perfectly, #7027
pie
    waitress doesn't want to heat piece of pie hot, because the piece won't look right
        afterwards, #7050
pillow on bed
    annoyed that a pillow becomes twisted inside its pillow case, #7114
pimple
    removing a pimple on his nose so he can quit thinking about it, #7174
place mats. *See* Chinese restaurants
plowing fields in straight lines, #7177
    competitions at local fairs, #7177
    resulting erosion, #7177
police telling homeowner to cut his grass, #7017
poster
    removes corner of poster that is still taped to wall, #7113
pottery
    rejects handmade set because of inconsistencies, #7088
printer
    keeping paper in printer orderly, #7122
puppies. *See* animal shelter
putting off straightening. *See* straightening

rectangular lots to cut, foreman assigns the crew, #7020
removes dirty dishes or a ripped up candy wrapper so won't feel bothered, #7120
removing excess pieces of paper
    on envelopes, #7062
    on stamps, #7062
rental company requires tenants to use identical curtains facing the outside, #7075
renter. *See* china cup
restaurant. *See* jacket on back of chair in restaurant
robe
    adjusting sash so the ends hang the same length, #7031
room
    feels need to straighten, #7119, #7122
    it's always nice to see a clean room, #7137
    parents expect children to keep their rooms straight, #7163
rug in bathroom
    feels better when straightens, #7133

school. *See* Christmas decorations
shoes, boots, and slippers
    placing them neatly, #7130
shopping, #7018
    rejects items with insignificant imperfections, #7054
    wants the most perfect copy, #7054
sideburns. *See* barber
sign. *See* business sign
socks
    effort to match similar socks perfectly, #7127
speaking consistently, #7082
sporting arenas using fake grass, #7178
stack of papers or books looks messy if items are turned at different angles, #7129
stamp collectors
    replace inferior copies of stamps with better copies, #7047
    want perfect copies of stamps for their collection, #7047
stamps. *See also* stamp collectors
    tears off excess pieces of paper, #7062
stereo speakers on a television set, #7103
stickers. *See* compact music disks
straightening, #7061, #7122, #7135, #7142, #7143, #7145 - #7148, #7150 - #7154. *See also* cleaning, messy, neat freaks
    afterwards I can go and do other things, #7135
    afterwards I feel peaceful and my life seems more harmonious, #7134
    all the things you do to straighten your home when guests are expected, #7142
    annoyed seeing another person straighten, #7151
    brother's compulsion to straighten, #7150
    differences between individuals as to what, where, and when to straighten, #7145 - #7154
    feels need to straighten room, #7119

straightening *(continued)*
inviting people over as an incentive to straighten beforehand, #7143
once my apartment is straight, I can relax, #7134
parents expect children to keep their rooms straight, #7163
straightening areas that are not one's responsibility, #7153 - #7154
in a dentist's office, #7154
in a department store, #7153
straightening, delays
after semester is over, #7160
puts off washing dishes until after work, #7159
straightening reduces stress, #7134
straightens apartment so will feel like being there, #7125
student who keeps her room very orderly, #7122
when I see a mess I have to correct it, #7115
when people are invited over to your home, #7142
why straighten when things will just get messy again? #7151
stroke. *See also* twisted mouths
ignores stroke to finish building a box, #7073
student paper
re-stapling student paper to get pages aligned, #7123
suburban community
bothered by messy appearance of a yard or shed, #7175
bylaw that allows a person to cut the grass on a vacant lot, #7175
sugar lumps, breaks up, #7081
sweaters in a department store, straightening, #7153

table, round
keeping the center line in the table perpendicular to the wall, #7025
Tai Chi
finds the body postures ugly, #7102
tape
trying to remove crease in the tape after applying it to paper, #7116
teacher, teaching
cancels class because so bothered that books in new office are not properly arranged, #7124
re-stapling student paper in order to align pages, #7123
teaching assistant. *See* grade book
Ted upset over file folders, #7110
television set
prefers the set with symmetrical stereo speakers, #7103
telling time. *See* watch
tie
repeatedly trying to tie a necktie perfectly, #7041
toast
serves toast on a fresh plate without crumbs, #7051

toilet bowl, #7039
    avoiding public toilets that have not been flushed, #7039
    flushing for other people, #7039
    using pee to clear the toilet bowl, #7065
T-shirt. *See* golf T-shirt
twisted mouths look unattractive, #7101
typing
    correcting errors, #7040

underwear, prefers pairs with waistbands that are still flat and smooth, #7018A

violations
    unsuccessful attempt to arrange a window display of books in flowing waves, #7162

waitress. *See* pie
wash
    hanging it properly, #7164
watch with blank face
    easier to tell time when the watch hands are horizontal or vertical, #7024
weeds
    removes weeds because they make the garden look messy, #7121
white
    decorating apartment with white items, #7077
wood lots. *See also* forestry department
    foreman assigning the crew rectangular lots to cut, #7020
wrinkles, dealing with, #7063, #7112
writing consistently, #7082

yolk, broken, #7049

SUBJECT INDEX

See also a) the brief contents and detailed contents for this volume, and b) the index of numbered examples.

acknowledgements, 213
activators, 21
association and extension, 22

behavior, 22
brief contents, 47

categories and models, 33
communication of feelings, 19
consciousness, 40
culture, 31

detailed contents, 49

effort, 25

feelings as instincts, 15

humans
    and other species, 44
    and the environment, 46

implications of this research, 13
index of numbered examples, 217
individuals, 18
instincts as feelings, 15
introduction to this series, 1

language, 28

mind, 38
models and behavior, 26

orientations, 35, 47-1033

photographs, 233
    sources of photographs, 231

continued on the next page

study of brain and behavior, 42
subject index, 229

tense and release, 24

volume eight, 11
volume five, 8
volume four, 6
volume one, 1
volume seven, 10
volume six, 10
volume three, 6
volume two, 3

SOURCES OF PHOTOGRAPHS IN THIS VOLUME

B.C. Barbara Currie

M.D. Marshall Dempster

M.E. Margot Elgharib, Mamdouh Elgharib

Y.F. Yu Fang

C.H. Charles Holmes

A.H. Andy Huynh

H.H. Hoa Huynh

B.J. Betty Jeffery

U.K. Udo Krautwurst

H.S. Harold Saint

E.T. Elizabeth Thai

L.W. Llewellyn Watson

M.Z. Marty Zelenietz

The remaining photographs are provided by the author.

PHOTOGRAPHS

1. Applying orientations 235

1.1. Natural phenomena are not oriented and are more difficult to categorize 235
1.2. Oriented human areas provide fewer categories and are easier to categorize 240
1.3. Contrast between natural phenomena (trees) and oriented human structures (buildings, a house) 249
1.4. Phenomena that require an additional category 253
1.5. Objects of human construction that have become disoriented 267
1.6. Disoriented phenomena that are reoriented 282
1.7. Efforts to orient and reorient phenomena 311
1.8. Oriented areas in a home 400
1.9. Oriented and disoriented areas in a home 406
1.10. Hiding disorientation behind a uniform surface 414
1.11. Oriented items on display for sale in stores 425
1.12. Items that are rejected because they become disoriented 430

2. Rectangles 432

2.1. The Middle East 433
2.2. Europe 473
2.3. South Asia 525
2.4. Southeast Asia 527
2.5. East Asia 562
2.6. Oceania 584
2.7. The Americas 587

3. Repetition 742

3.1. Nature 743
3.2. Africa 744

continued on the next page

3.3. The Middle East 752
3.4. Europe 826
3.5. South Asia 881
3.6. Southeast Asia 891
3.7. East Asia 934
3.8. Oceania 949
3.9. The Americas 955
3.10. Repetition applied symmetrically 1030

1. Applying orientations

1.1. Natural phenomena are not oriented and are more difficult to categorize



1-2. Trees in winter. Charlottetown, Prince Edward Island (PEI).

1.1. Natural phenomena are not oriented and are more difficult to categorize (continued)



2.



3. Banyan tree. Hawaii.

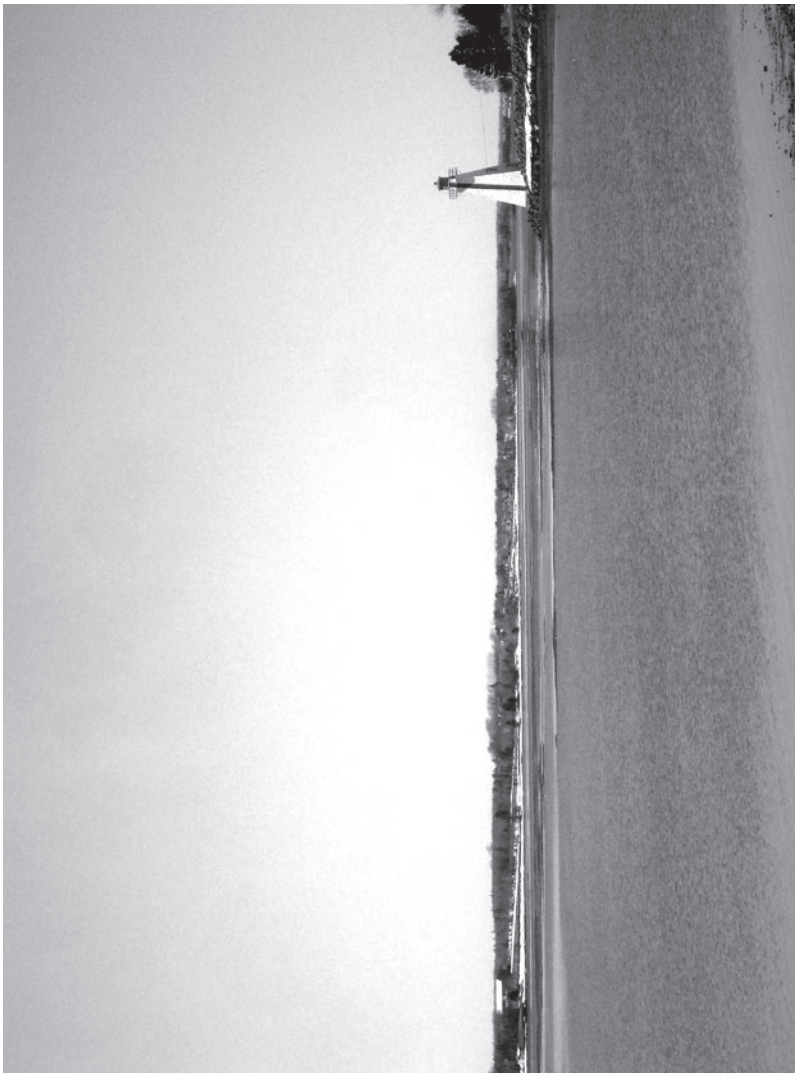
1.1. Natural phenomena are not oriented and are more difficult to categorize continued



4. Trees and roots. Kauai, Hawaii. H.S.



5. Tree roots and rocks on the surface.



6. Some natural phenomena are easy to categorize. A body of water when there is no wind, and a day with a clear sky. Charlottetown, PEI.

1.2. Oriented human areas provide fewer categories and are easier to categorize



7. Boardwalk by the water. Victoria Park, Charlottetown, PEI.



8. Side of a building. Charlottetown, PEI.

1.2. Oriented human areas provide fewer categories and are easier to categorize continued



9. Wall and floor in a shopping mall. Charlottetown, PEI.

10. Putting green at a golf course. Charlottetown.

1.2. Oriented human areas provide fewer categories and are easier to categorize continued



11. Lawn in front of a home. Prince Edward Island (PEI).



12. Field. PEI.

1.2. Oriented human areas provide fewer categories and are easier to categorize continued



13. Field. PEI.



14. Highway. PEI.

1.2. Oriented human areas provide fewer categories and are easier to categorize continued



15. Highway and bridge. PEI.

1.3. Contrast between natural phenomena (trees) and oriented human structures (buildings)

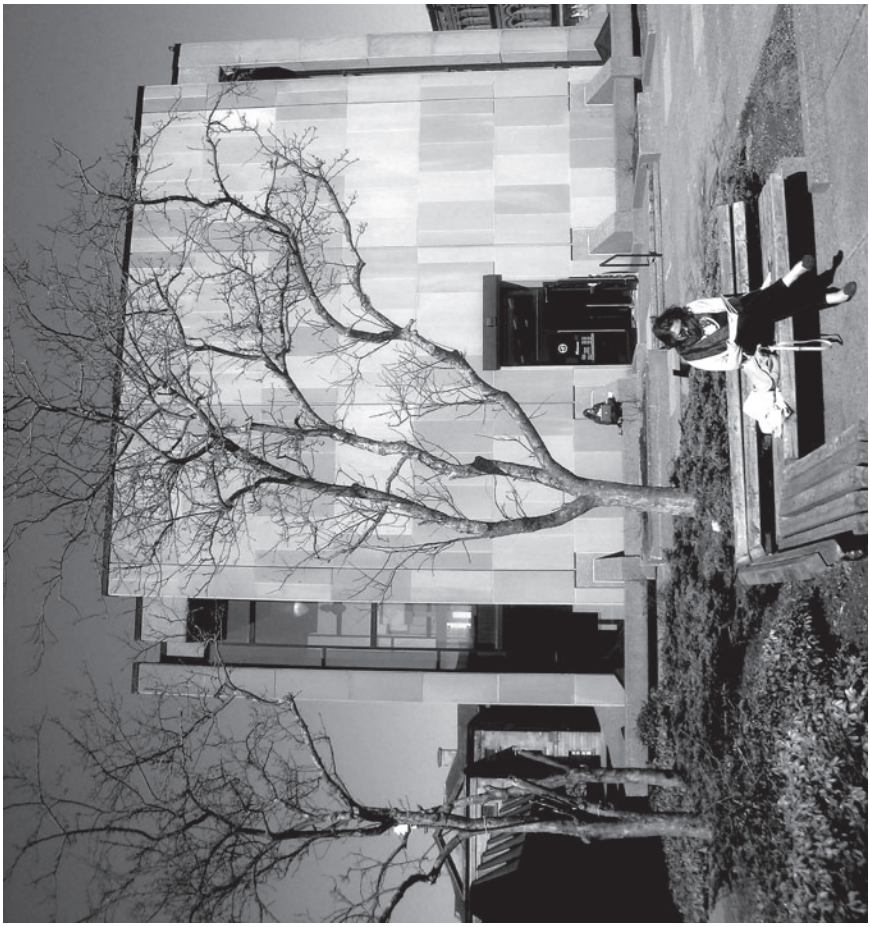


16.

1.3. Contrast between natural phenomena (trees) and oriented human structures (buildings) continued



17.



18.

1.3. Contrast between natural phenomena (a tree) and oriented human structures (houses) continued



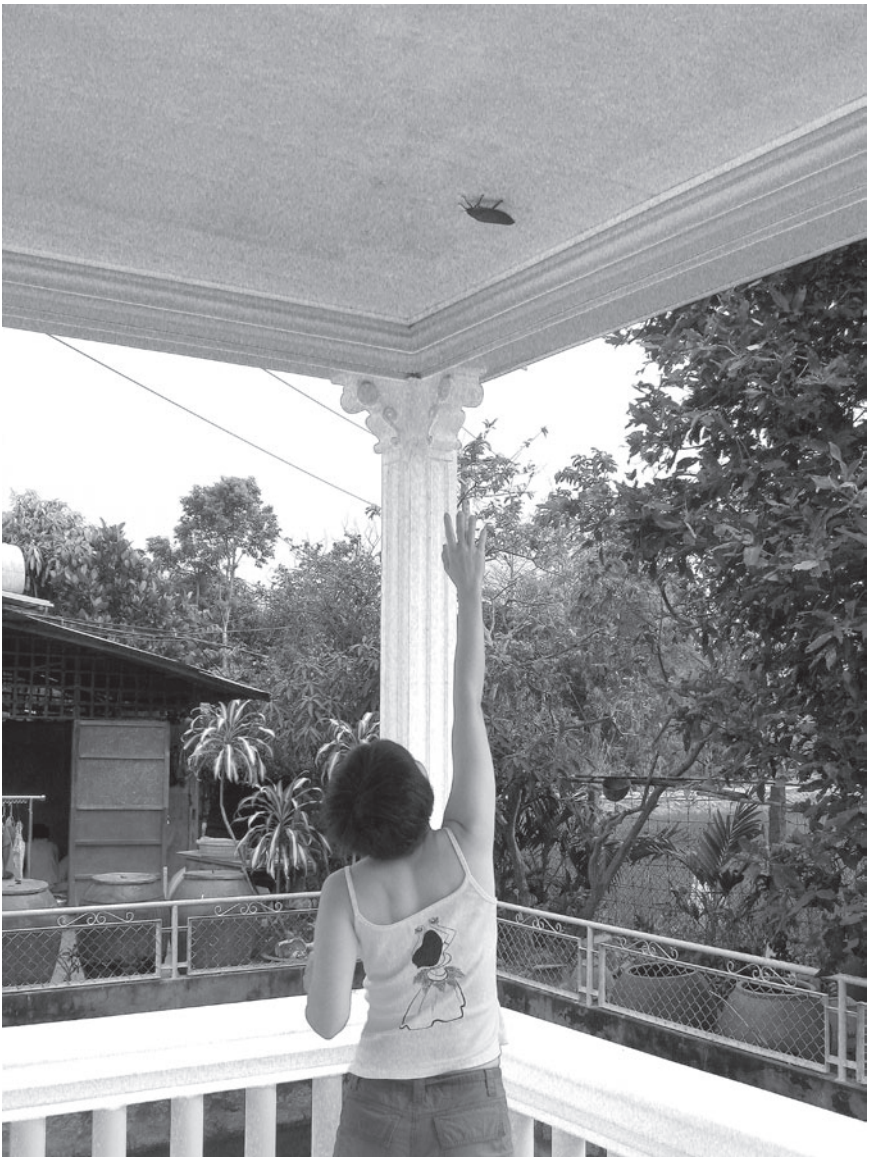
19.

1.4. Phenomena that require an additional category



20. Bamboo leaves growing through a Venetian blind. Toronto, Ontario.

1.4. Phenomena that require an additional category continued

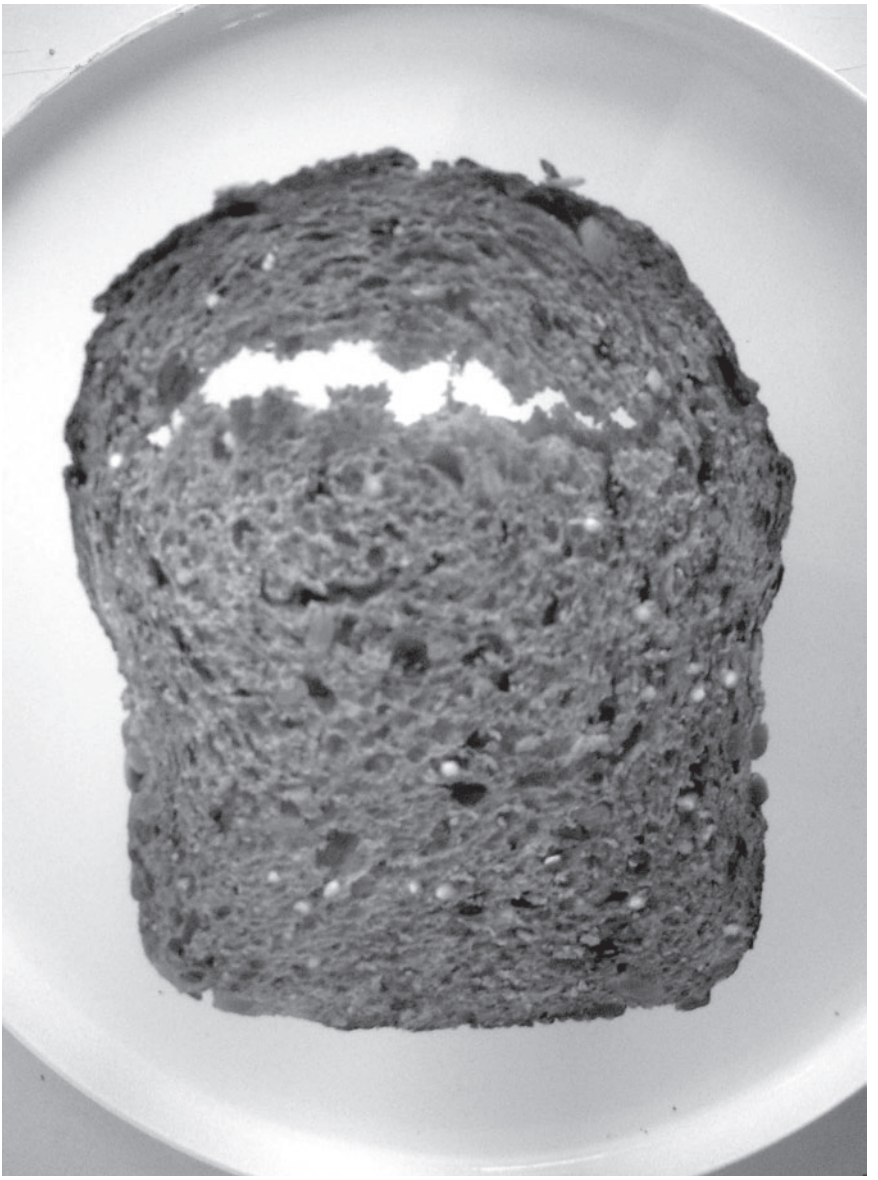


21-22. Noticing a large insect on the ceiling of a pavilion. Vietnam.

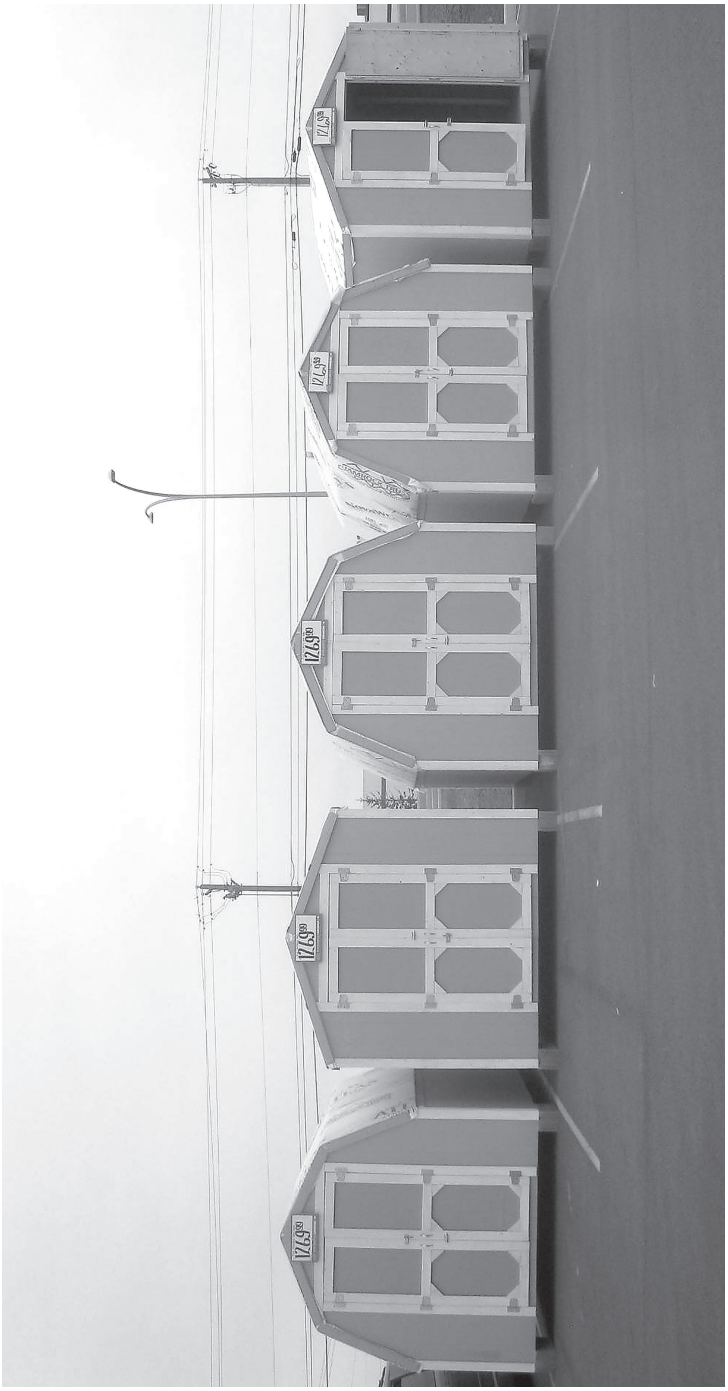


22.

1.4. Phenomena that require an additional category continued



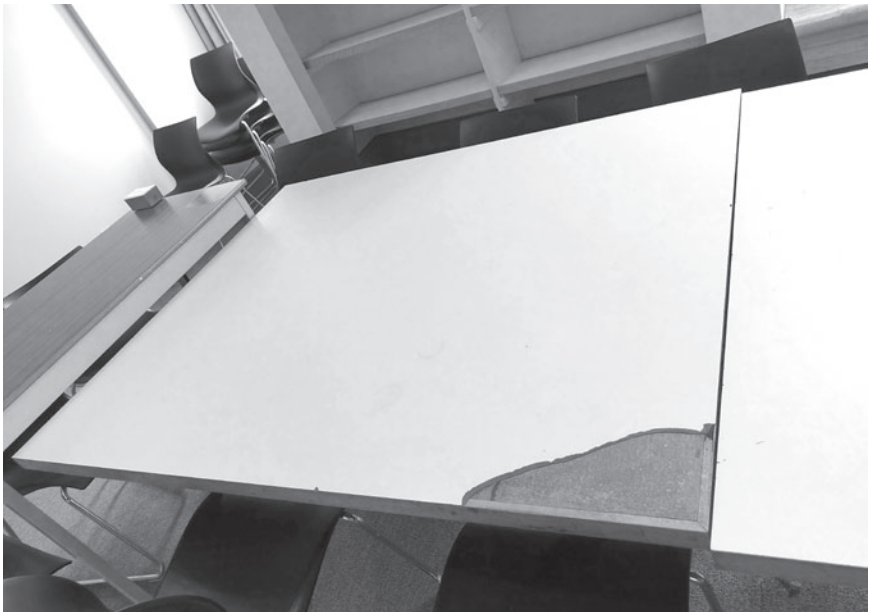
23. Empty space in a slice of bread.



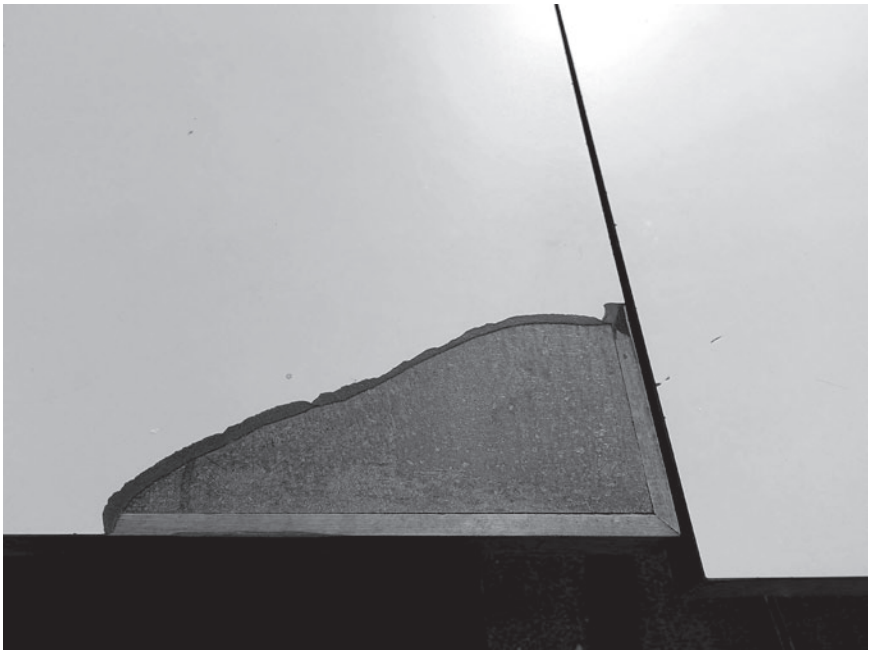
24. Open door in one shed in a row of sheds with closed doors. The sheds are for sale at a building supply store. Charlottetown, PEI.

1.4. Phenomena that require an additional category continued

25-27. Broken corner on the surface of a table in a classroom. PEI.



26-27.

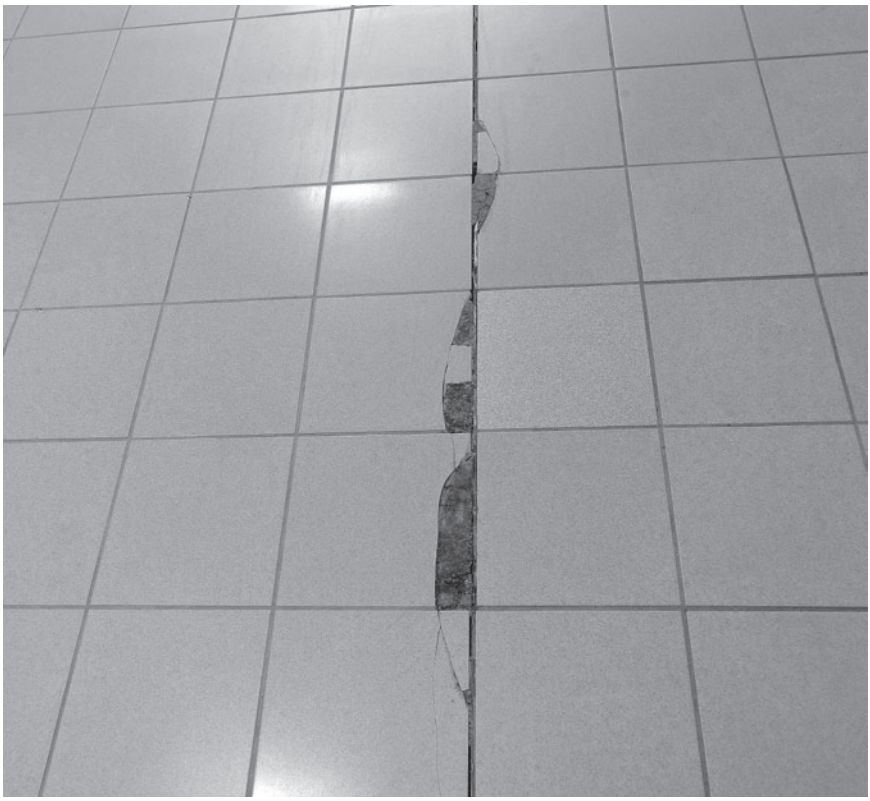


1.4. Phenomena that require an additional category continued



28.

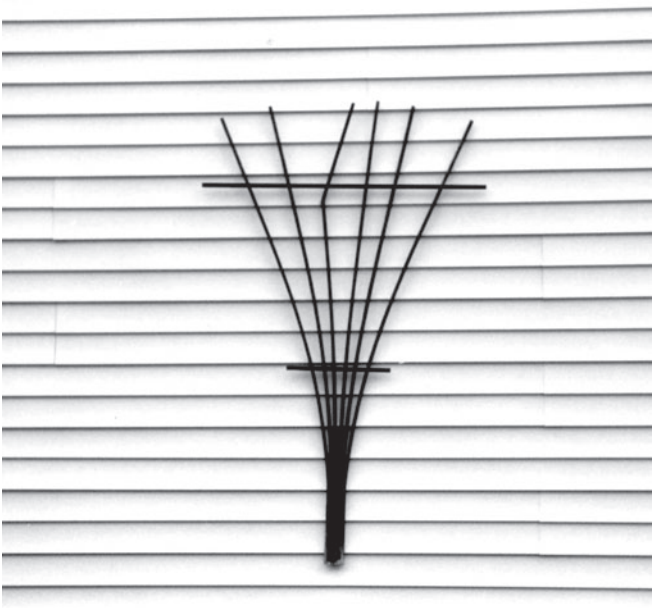
28-29. Broken tiles on the floor of an athletic complex. Additional broken tiles continue ahead. The breaks are caused by the wall just beneath these tiles from the floor below this one. Photos **139-142** show these tiles being replaced. PEI.



1.4. Phenomena that require an additional category continued



30-31. A bent tine in a decorative rake on the outside wall of a house. Charlottetown, PEI.

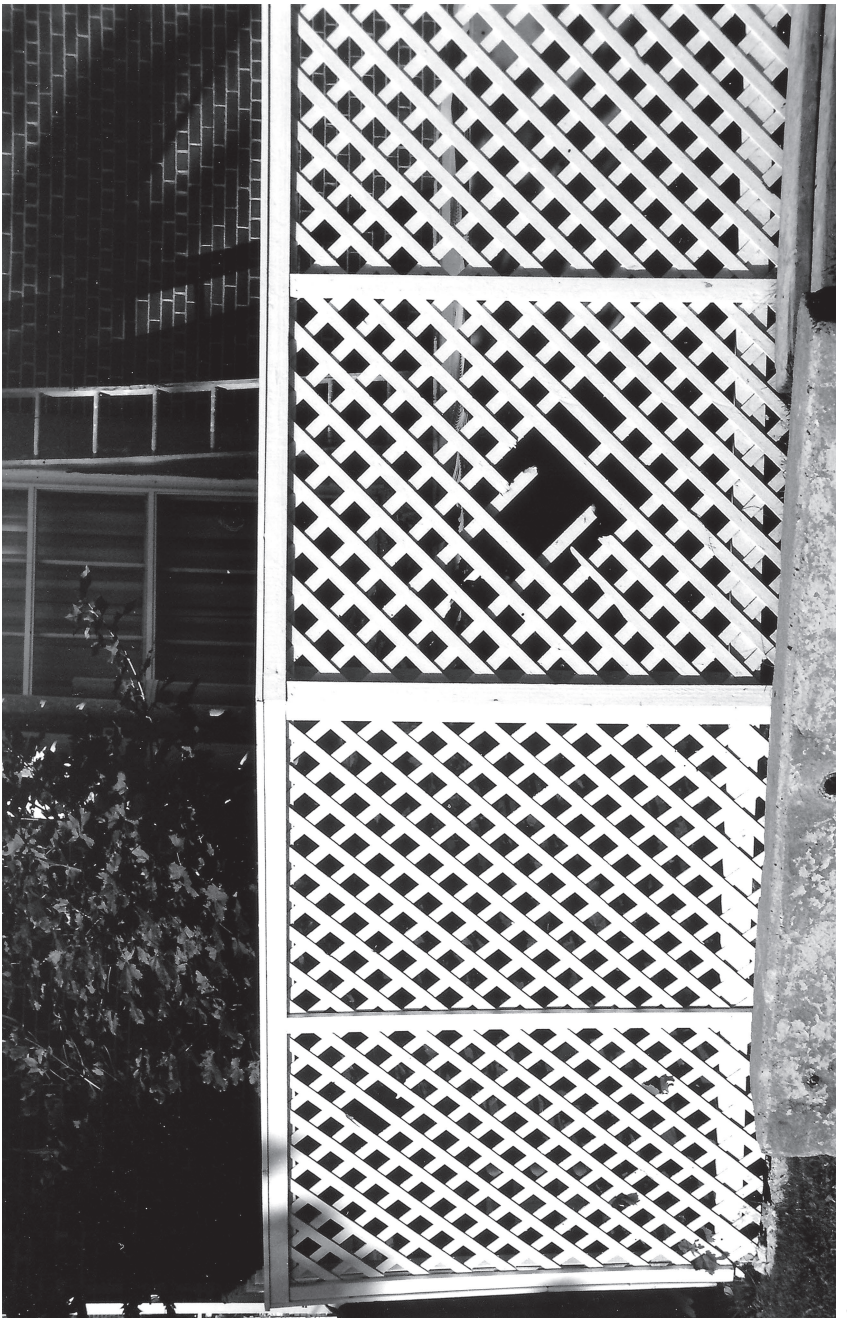




32-33. A bent handle on a door viewed from outside and inside a building. Charlottetown, PEI.



1.4. Phenomena that require an additional category continued

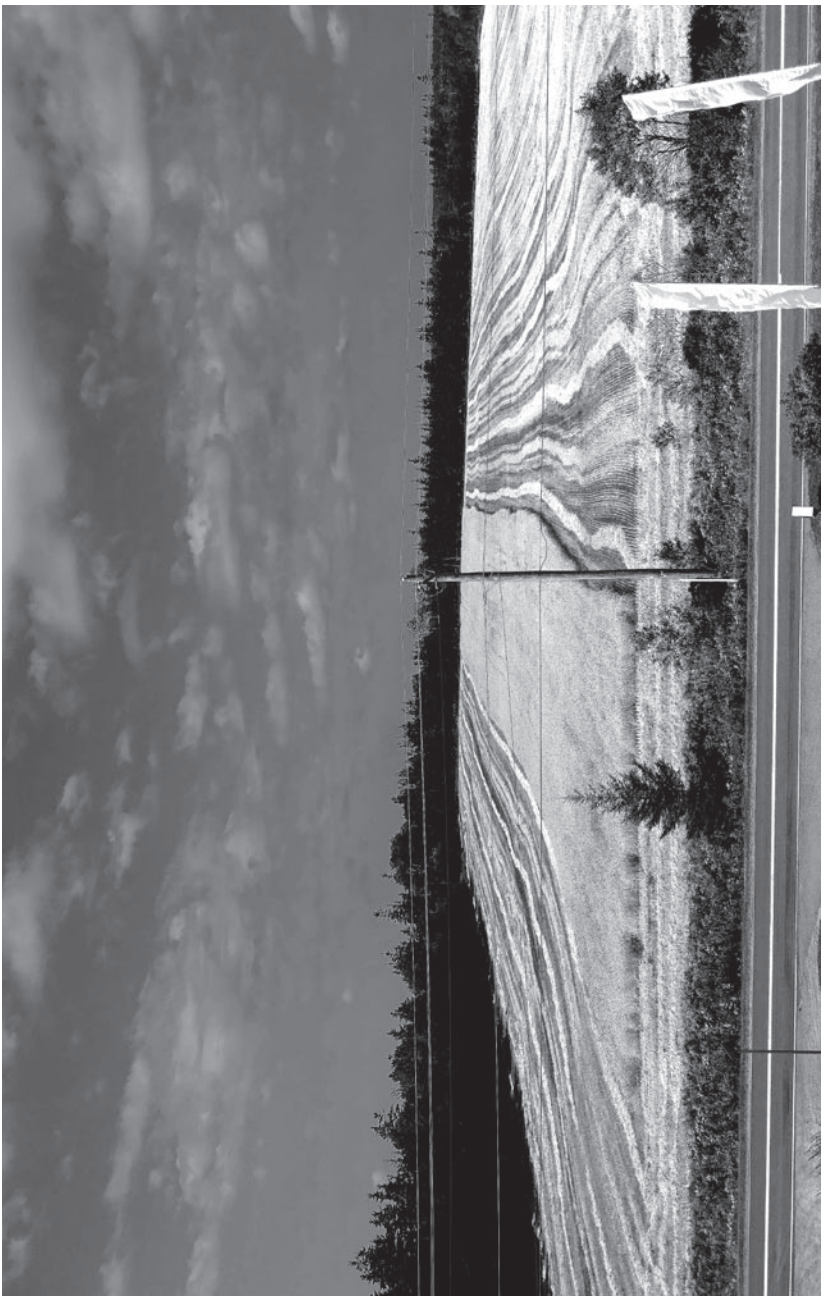


34. Broken areas in a fence at a home. Charlottetown, PEI.



35. Broken "fence" underneath a deck. Charlottetown, PEI.

1.4. Phenomena that require an additional category continued



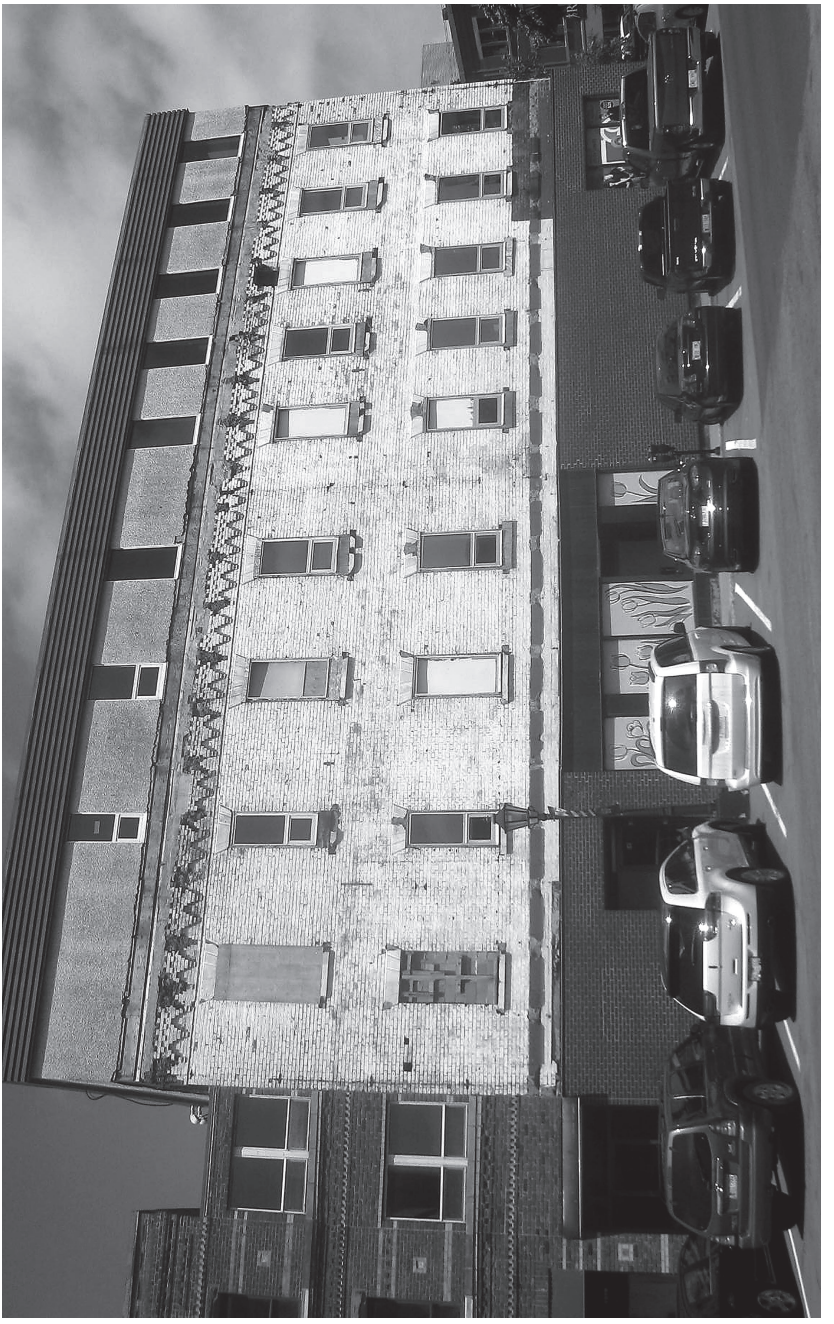
36. Field with crooked furrows. PEI.

1.5. Objects of human construction that have become disoriented



37. Sagging barn. PEI.

1.5. Objects of human construction that have become disoriented
continued



38-40. Deteriorating wall of a building. Charlottetown, PEI.



39.



40.

1.5. Objects of human construction that have become disoriented continued



41. Recycling container that has been blown into the street during a rain storm. Charlottetown, PEI.



42. Pile of scrap at a recycling company. Hokkaido, Japan. H.S.



43. Discarded broken umbrella.

1.5. Objects of human construction that have become disoriented
continued



44. Car with a wrecked front. Vancouver, British Columbia.

45.
Broken objects on a roof top. Notice how many objects are rectangular and circular. Cairo, Egypt.

1.5. Objects of human construction that have become disoriented
continued



46-47. Sidewalk under pressure from tree roots. Hollywood, California.



47.

1.5. Objects of human construction that have become disoriented
continued



48.



48-49.
Demolished building. Charlottetown, PEI.

1.5. Objects of human construction that have become disoriented continued

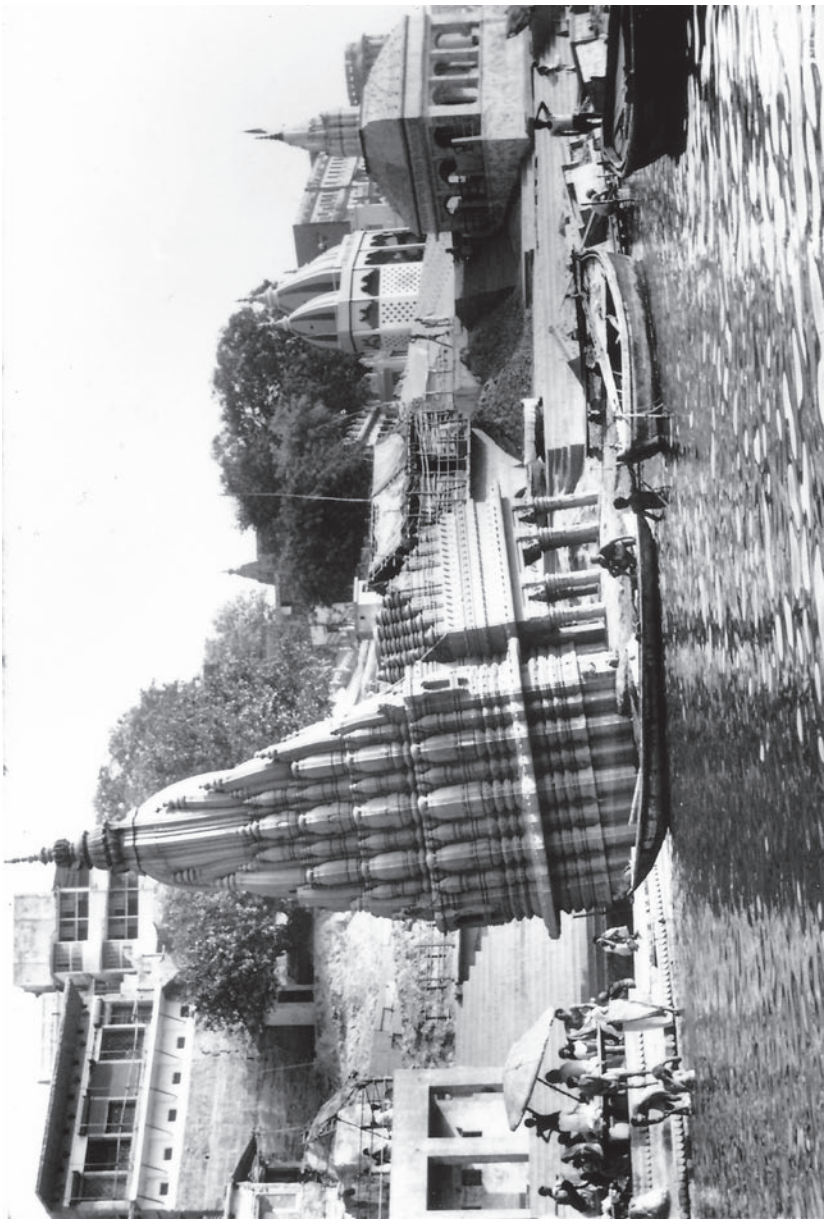


50. Collapsing barn. PEI.



51. Tower that is no longer vertical. Pisa, Italy. H.S.

1.5. Objects of human construction that have become disoriented
continued



52. Temple that is no longer vertical. Varanasi, India. H.S.



53. A structure that has been constructed so that it appears disoriented in order to attract the attention of the public to get them to pay to visit a museum. Cavendish, PEI.

1.6. Disoriented phenomena that are reoriented



54.

54-55.
Box of facial tissue on the top of a toilet is returned to a position where it is centered and parallel with the wall.

1.6. Disoriented phenomena that are reoriented continued



56.

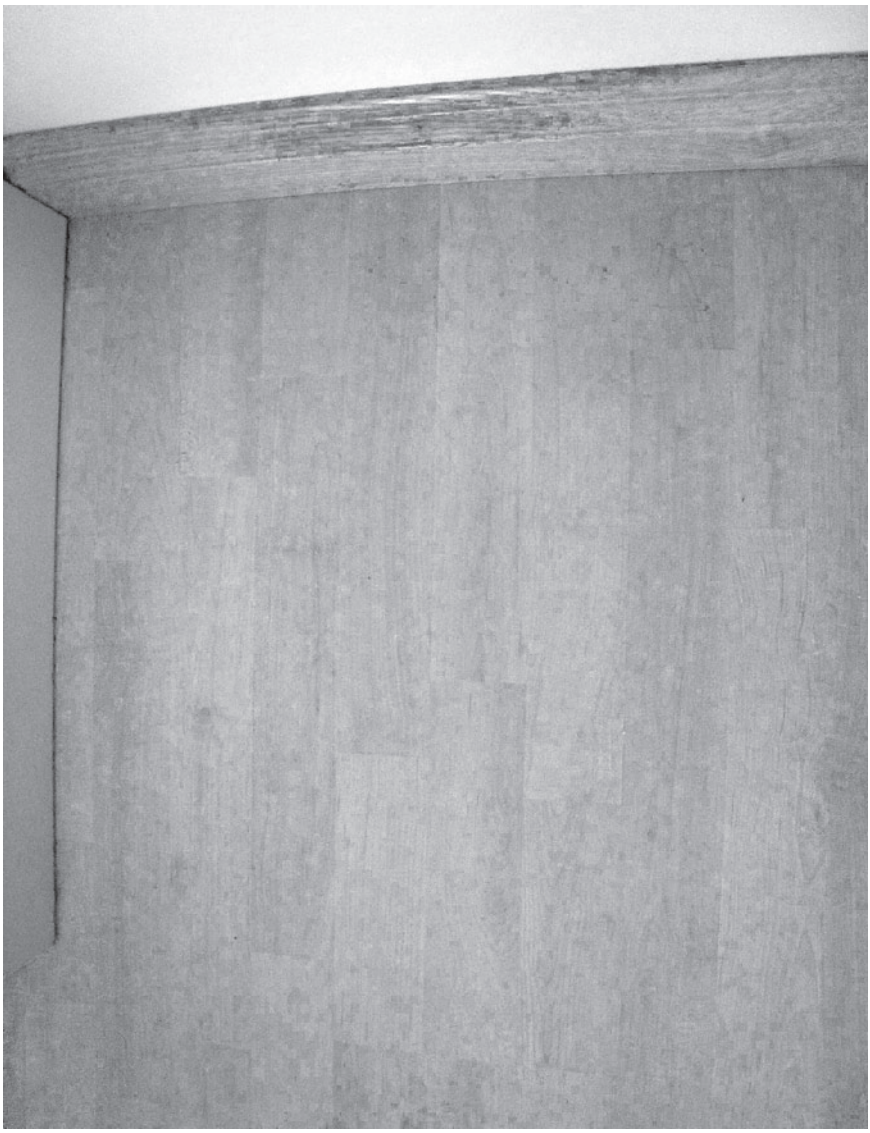


56-57. Slat in a Venetian blind is turned to the same angle as the other slats.

1.6. Disoriented phenomena that are reoriented continued

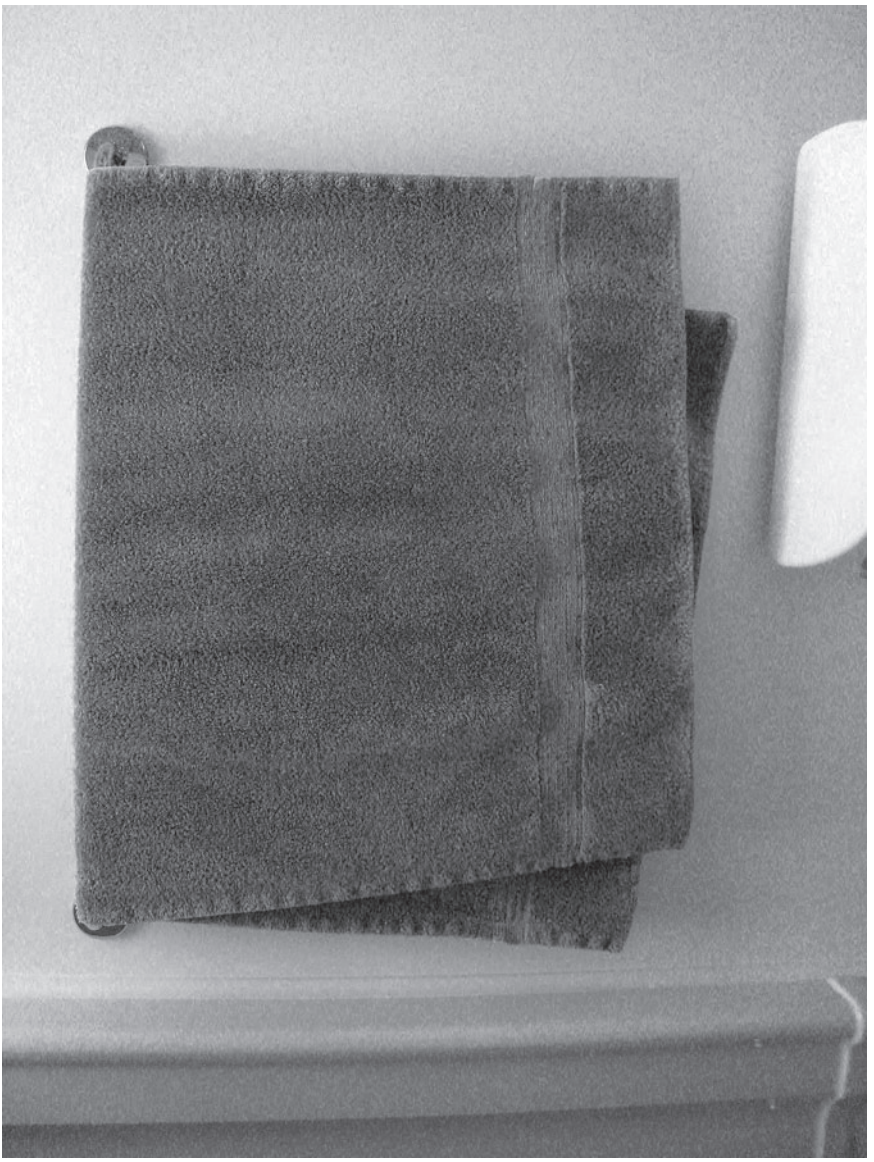


58.

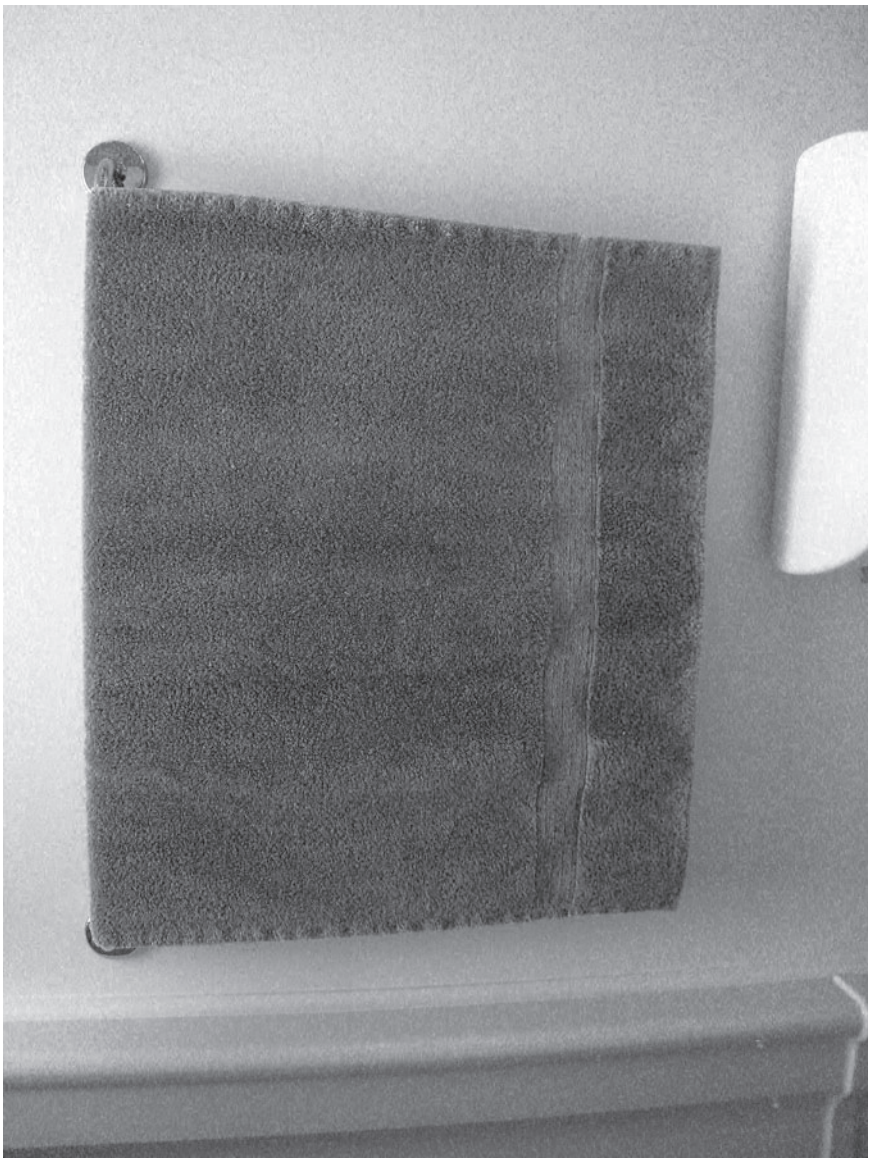


58-59.
Dust is removed from the floor.

1.6. Disoriented phenomena that are reoriented continued



60.



60-61. Towel is repositioned so that its ends are horizontal.

1.6. Disoriented phenomena that are reoriented continued



62.



62-63. A drawer of a cabinet is closed to match the other drawers. Notice the rectangular design of the cabinet, the chair, and the cushion on the chair.

1.6. Disoriented phenomena that are reoriented continued



64.

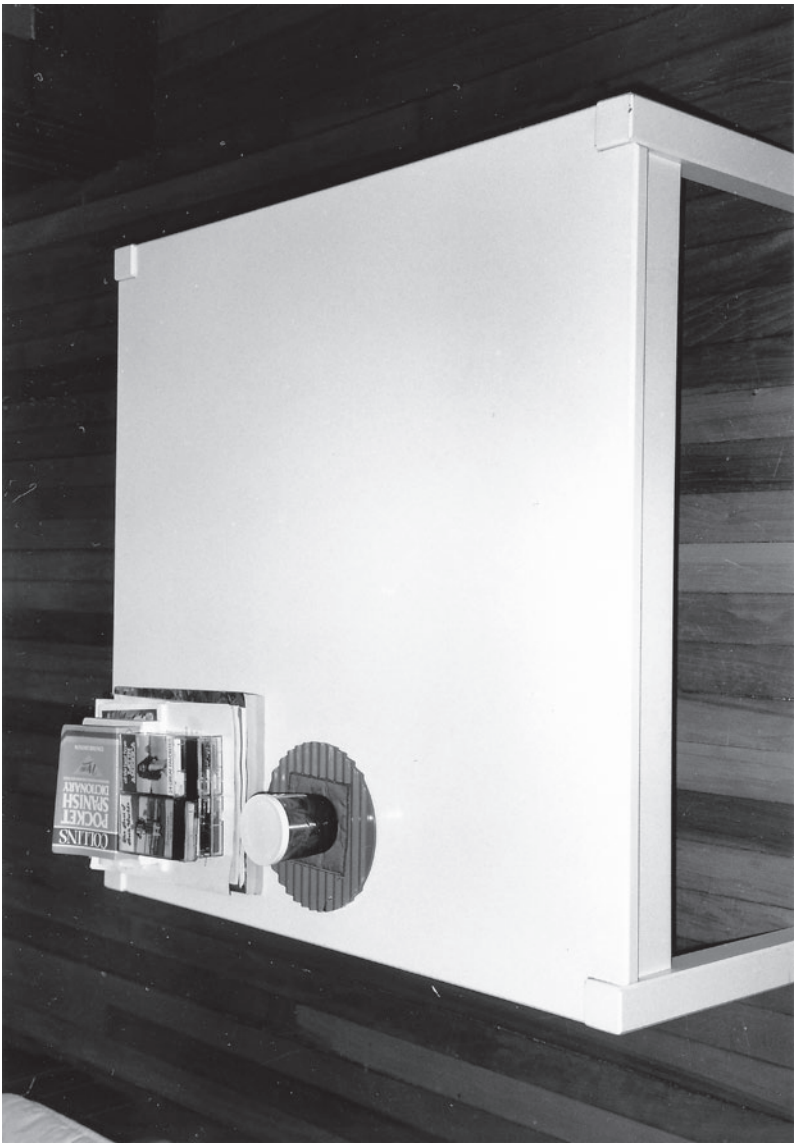


64-65. A space heater that is not parallel to the wall is returned to a parallel position.

1.6. Disoriented phenomena that are reoriented continued



66.



66-67. The items on the table are stacked together and aligned with the edges of the table. Subsequently there is a uniform surface over most of the table. Notice that the items are rectangular and circular.

1.6. Disoriented phenomena that are reoriented continued

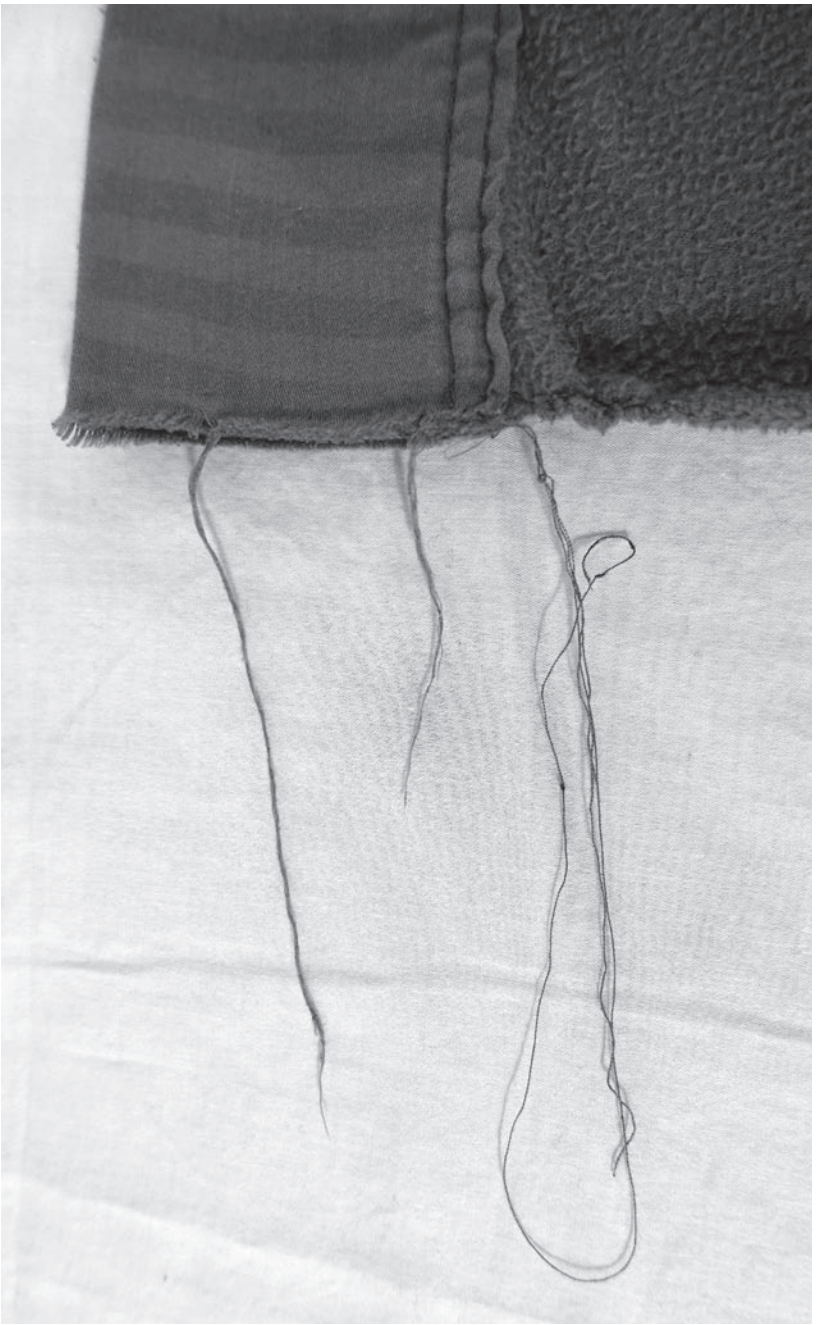


68.

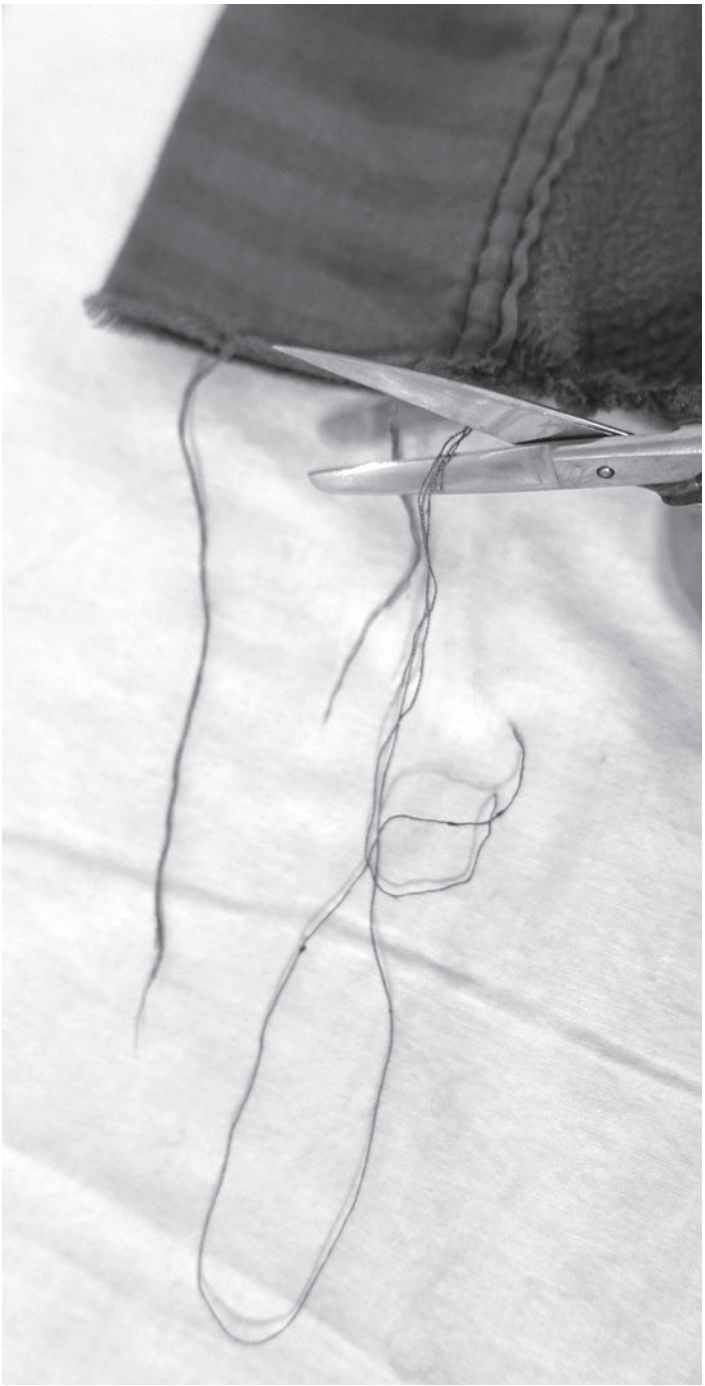


68-69. Clean laundry in a plastic basket is sorted and folded into rectangles before it is placed on shelves and in drawers.

1.6. Disoriented phenomena that are reoriented continued

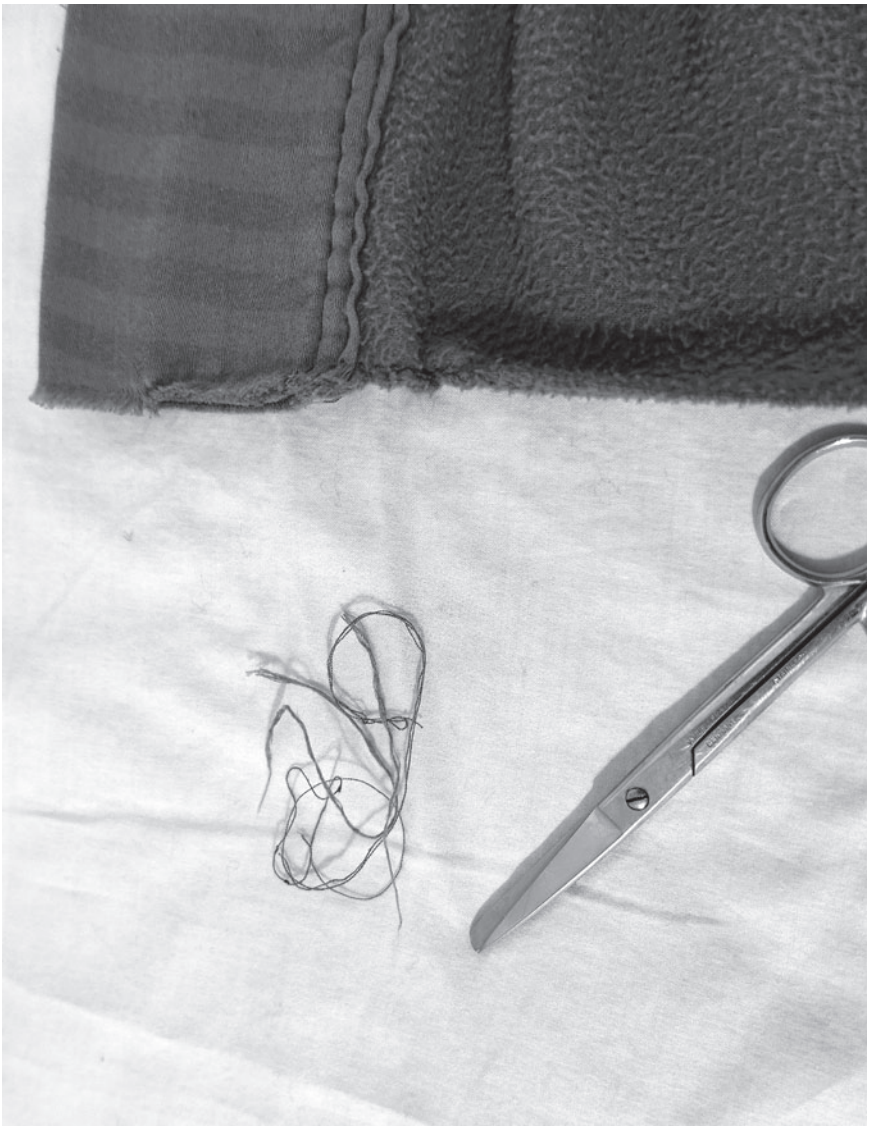


70-72. Cutting off threads from a winter sheet in order to produce a straight edge on the sheet.



71.

1.6. Disoriented phenomena that are reoriented continued



72.



73-82. Raising a Venetian blind and attempting to get it horizontal.

1.6. Disoriented phenomena that are reoriented continued



74.



75.

1.6. Disoriented phenomena that are reoriented continued

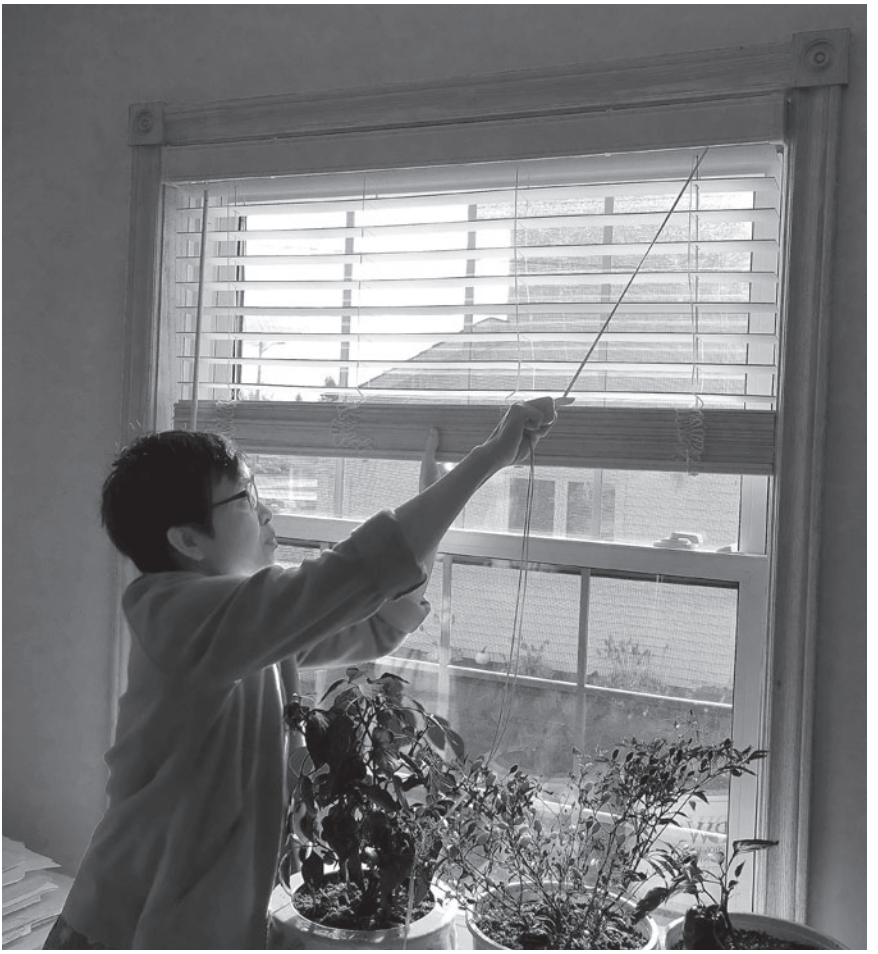


76.



77.

1.6. Disoriented phenomena that are reoriented continued



78.



79.

1.6. Disoriented phenomena that are reoriented continued



80.



81.

1.6. Disoriented phenomena that are reoriented continued



82.

1.7. Efforts to orient and reorient phenomena



83. Employees straightening tables and chairs and cleaning tables in the eating area of a shopping mall. Charlottetown, PEI.

1.7. Efforts to orient and reorient phenomena continued



84-85. Removing wrinkles and straightening the edges of a bed runner.



85.

1.7. Efforts to orient and reorient phenomena continued





86-87.
An area of a bedroom before and after straightening up. Vancouver, British Columbia.



88. Checking a room to make sure everything is tidy (oriented) just before guests arrive for a party. Vancouver, British Columbia.

1.7. Efforts to orient and reorient phenomena continued

89-90.
Cleaning the display window of a clothing store in a shopping mall. Charlottetown, PEI.

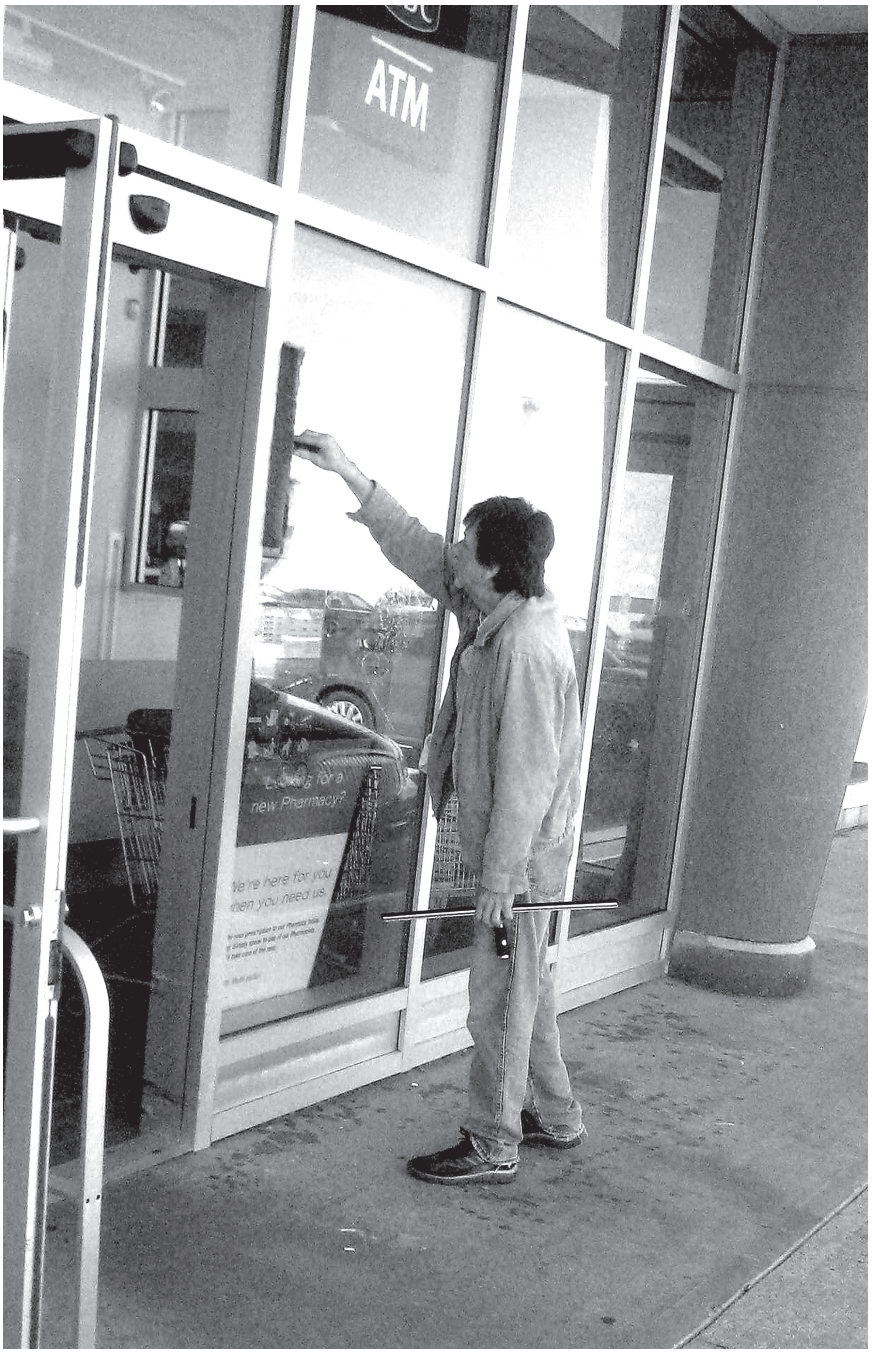


90.

1.7. Efforts to orient and reorient phenomena continued



91-92. Cleaning windows at a pharmacy. Charlottetown, PEI.



92.

1.7. Efforts to orient and reorient phenomena continued



93-96.
Clearing and cleaning tables in the food court of a shopping mall. Surrey, British Columbia.



94.

1.7. Efforts to orient and reorient phenomena continued



95.



96.

1.7. Efforts to orient and reorient phenomena continued



97-100. Cleaning food trays in the food court of a shopping mall. Surrey, British Columbia.



98.

1.7. Efforts to orient and reorient phenomena continued



99.



100.

1.7. Efforts to orient and reorient phenomena continued

101. Cleaner in the food court of a shopping mall. Surrey, British Columbia.



102-106. Cleaning Northwest Coast art. Vancouver International Airport. British Columbia.

1.7. Efforts to orient and reorient phenomena continued



103.



104.

1.7. Efforts to orient and reorient phenomena continued



105.



106.

1.7. Efforts to orient and reorient phenomena continued



107.
Cart for cleaning washrooms in a building.

108-110.
City employee removing dirt and trash from a downtown sidewalk and street. Charlottetown, PEI.

1.7. Efforts to orient and reorient phenomena continued



109.



110.

1.7. Efforts to orient and reorient phenomena continued



111-114. Sweeping dirt to clear a flat surface, a parking area at a plant nursery. Charlottetown, PEI.





113-114.



1.7. Efforts to orient and reorient phenomena continued



115-116. Removing trash from a parking lot.

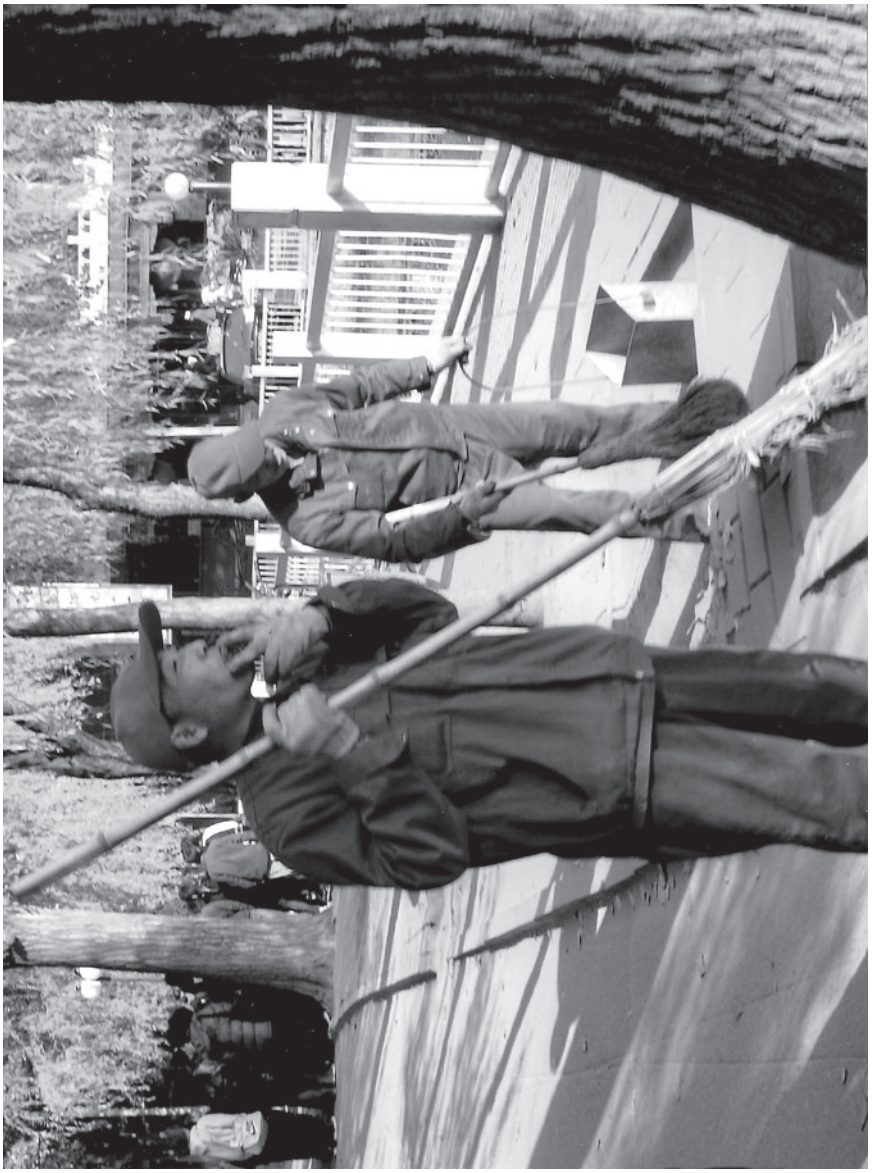

RESERVED
PARKING
SENIORS ACTIVE
LIVING CENTER
UNAUTHORIZED
VEHICLES WILL BE
TOWED!

116.

1.7. Efforts to orient and reorient phenomena continued

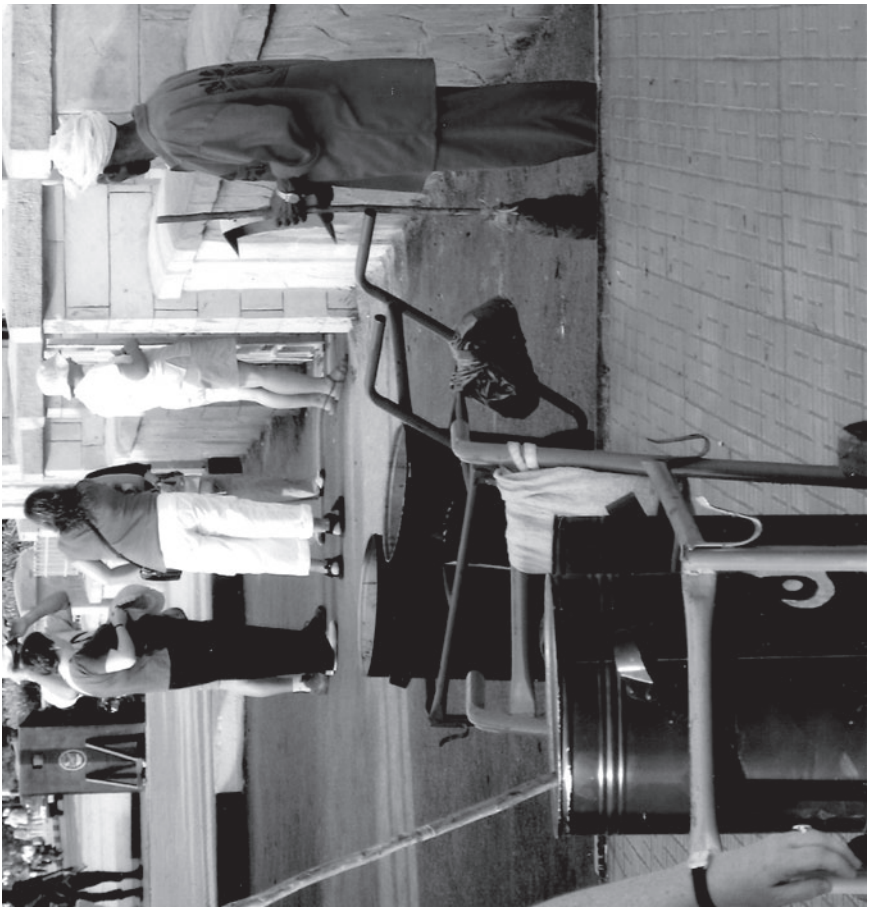


117. Removing leaves from a lawn on a university campus. Charlottetown, PEI.



118.
Outdoor cleaners in Beijing, China. H.S.

1.7. Efforts to orient and reorient phenomena continued



119.
Outdoor cleaner near a tourist site. Luxor, Egypt.

120.
Workers with a truck collecting and removing trash. Cairo, Egypt.

1.7. Efforts to orient and reorient phenomena continued

121-122. Blowing dirt and trash off the driveway of a fast food restaurant to create a clear surface. PEI.



122.

1.7. Efforts to orient and reorient phenomena continued



123-124. Using a blower to clear dirt and trash off the street at the entrance to an alley. Vancouver, British Columbia.


COMMERCIAL LANES
EXCEPT COMMERCIAL VEHICLES
Roadhouse
NOW OPEN

124.

1.7. Efforts to orient and reorient phenomena continued



125-137. Cleaning (washing and drying) floor mats from a vehicle. Subsequently washing soapsuds out of the driveway. Charlottetown, PEI.



126.

1.7. Efforts to orient and reorient phenomena continued



127.



128.

1.7. Efforts to orient and reorient phenomena continued



129.



130.

1.7. Efforts to orient and reorient phenomena continued



131.



132.

1.7. Efforts to orient and reorient phenomena continued



133.



134.

1.7. Efforts to orient and reorient phenomena continued



135.



136.

1.7. Efforts to orient and reorient phenomena continued



137.

138.
Filling potholes and fixing broken pavement in order to provide a smooth surface for drivers. Charlottetown, PEI.

1.7. Efforts to orient and reorient phenomena continued



139-142. Replacing the row of broken tiles seen in Photos **28** and **29** above. The end result is a new row of darker tiles.



140.

1.7. Efforts to orient and reorient phenomena continued



141.



142.

1.7. Efforts to orient and reorient phenomena continued



143. Removing snow from roads in order to uncover the pavement, a smooth surface, that drivers can easily drive on. PEI.



144. A Zamboni resurfaces the ice in a rink. It looks better and is much easier skating on smooth ice than it is on rough ice that has been chewed up by previous skaters. PEI.

1.7. Efforts to orient and reorient phenomena continued



145-146.
A watchband on which the white dye is wearing away is replaced by a new watchband. The owner expected that he would need to replace the watchband eventually and purchased the second watchband at the same time he purchased the watch.


TISSOT
12
3
9
30
10
40
20
100
110
120
130
140
150
160
180
200
220
240

146.

1.7. Efforts to orient and reorient phenomena continued



147-148.
Trimming hedges at a home to be horizontal and rectangular. Charlottetown.



148.

1.7. Efforts to orient and reorient phenomena continued



149-151. Using a special tool to remove dandelions and their roots. Dandelions are considered an eyesore because they interrupt the uniform appearance of the lawn. Charlottetown, PEI.

150. 

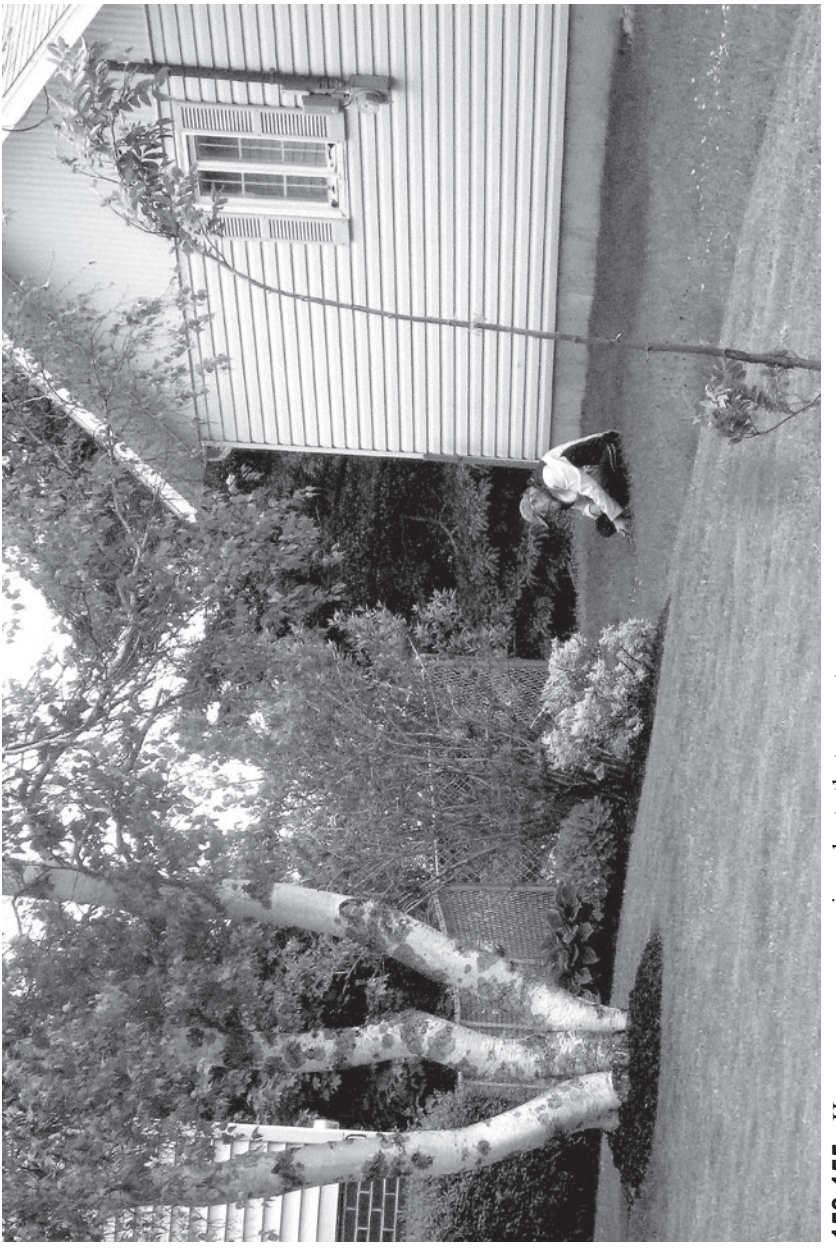
1.7. Efforts to orient and reorient phenomena continued



151.

152. Systematically removing all the dandelions on a lawn. The woman has cleared the area between herself and the house. Charlottetown, PEI.

1.7. Efforts to orient and reorient phenomena continued



153-155. Homeowners removing plants that are not grass.



154-155.



1.7. Efforts to orient and reorient phenomena continued



156. Mowing a lawn to make the surface appear more uniform. Charlottetown.



157. Resurfacing a driveway at a home to make the surface appear more uniform. Charlottetown.

1.7. Efforts to orient and reorient phenomena continued

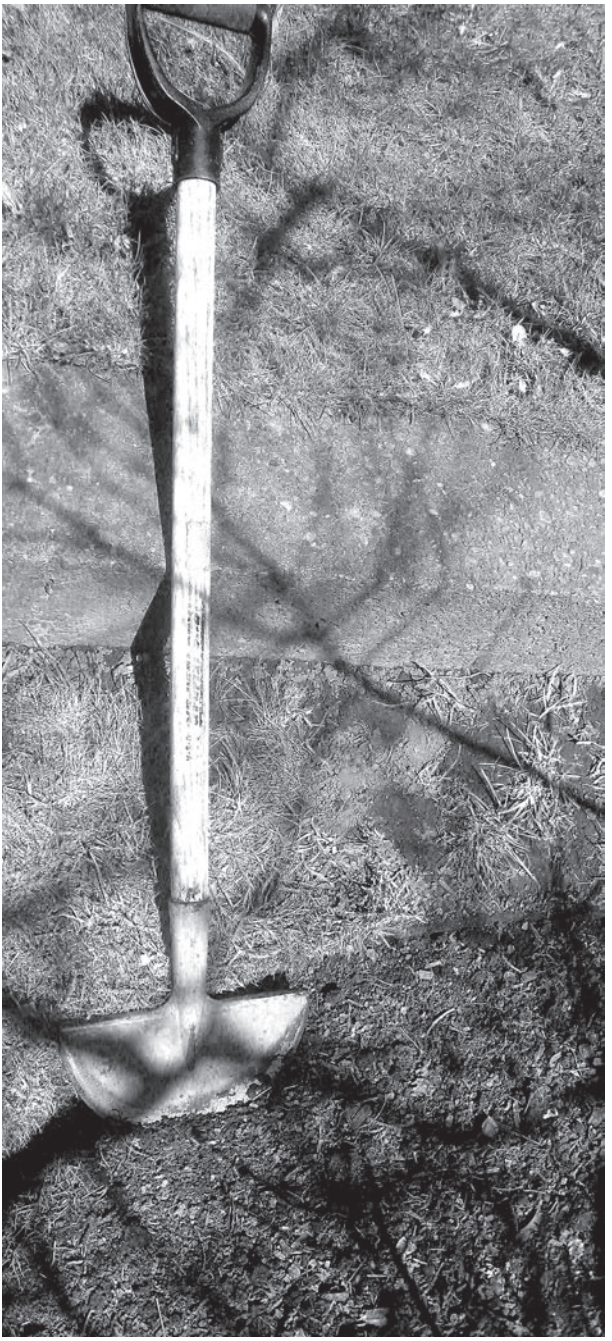


158-162. Using a semi-circular edging tool to make a clean uniform edge by cutting away grass and other plants that infringe into the circular area surrounding trees. This is done yearly in the spring at downtown public buildings. Charlottetown, PEI.



159.

1.7. Efforts to orient and reorient phenomena continued

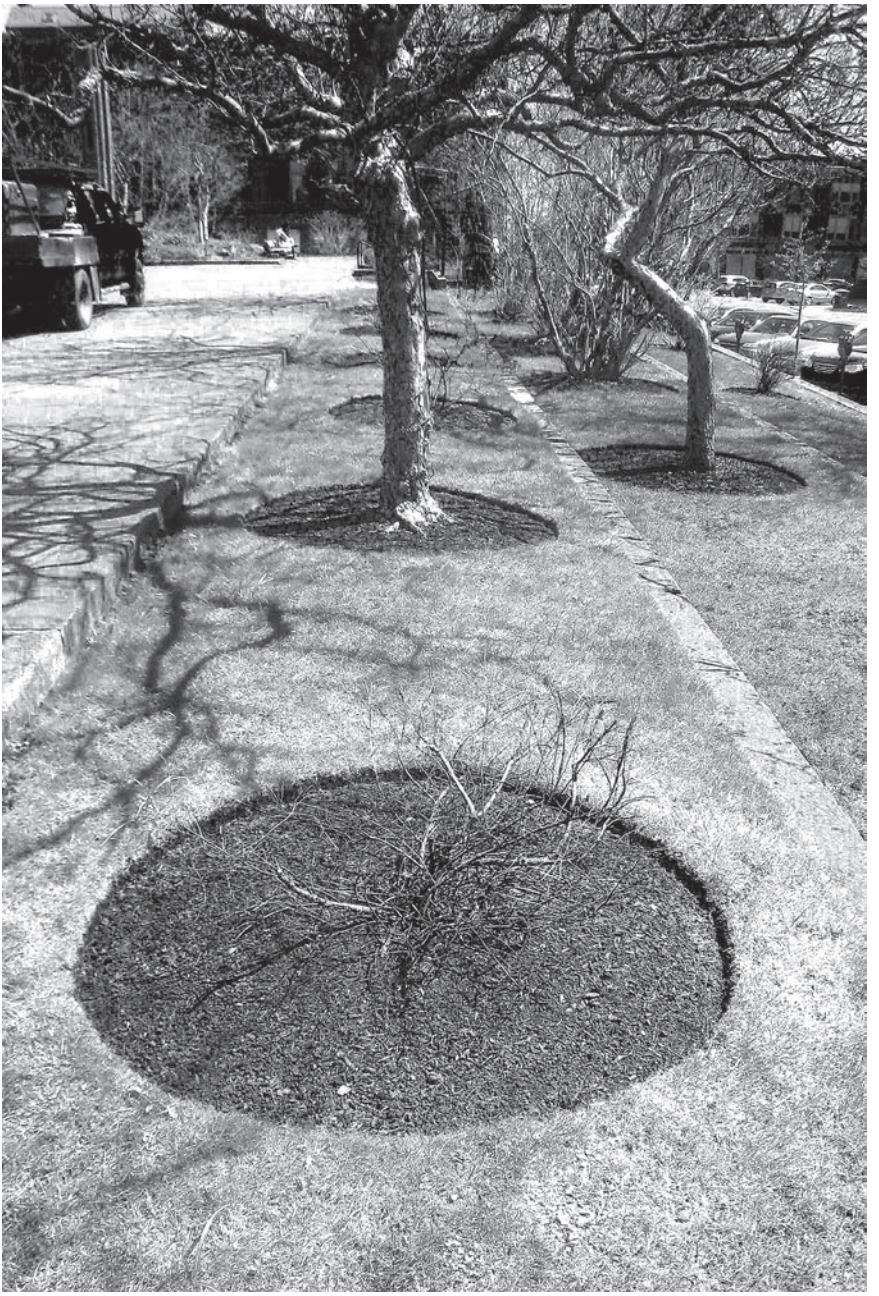


160.
Tool for cutting clean edges.



161-162. Uniform edges after edging tool is used. Notice the circular areas created around the plants.

1.7. Efforts to orient and reorient phenomena continued



162.

163. Renewing the parallel and perpendicular lines that mark parking spaces. Charlottetown..

1.7. Efforts to orient and reorient phenomena continued



164. Renewing parallel and perpendicular lines on a sports field. Charlottetown, PEI.



165-169. Rectangular strips and heating equipment used to renew parallel crosswalk lines for pedestrians crossing streets. PEI.

1.7. Efforts to orient and reorient phenomena continued

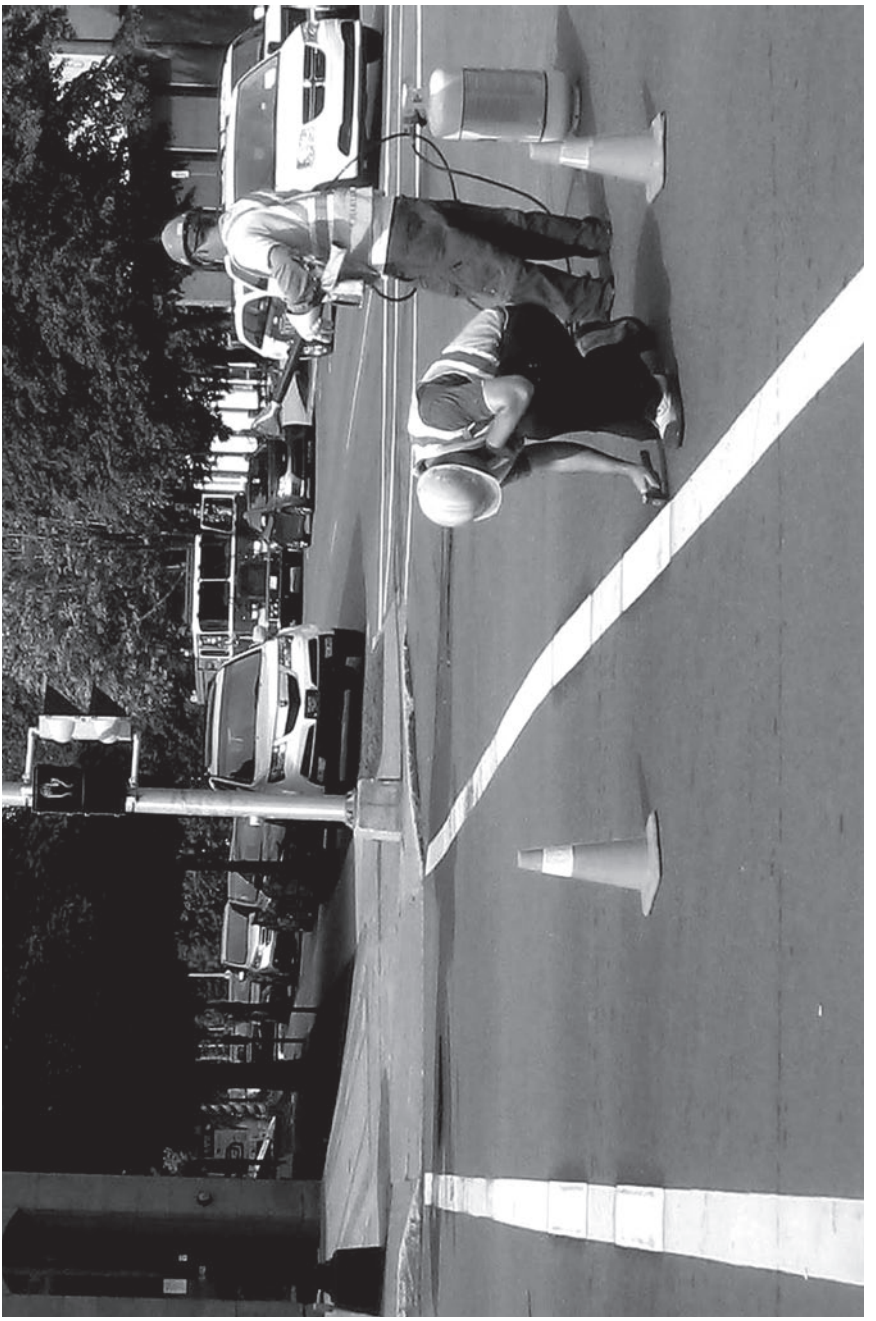


166.



167.

1.7. Efforts to orient and reorient phenomena continued



168.



169.

1.7. Efforts to orient and reorient phenomena continued



170-174. Training summer staff how to place plants in flower beds so the plants will be in a line and equidistant from each other. Charlottetown.



171.

1.7. Efforts to orient and reorient phenomena continued



172.



173.

1.7. Efforts to orient and reorient phenomena continued

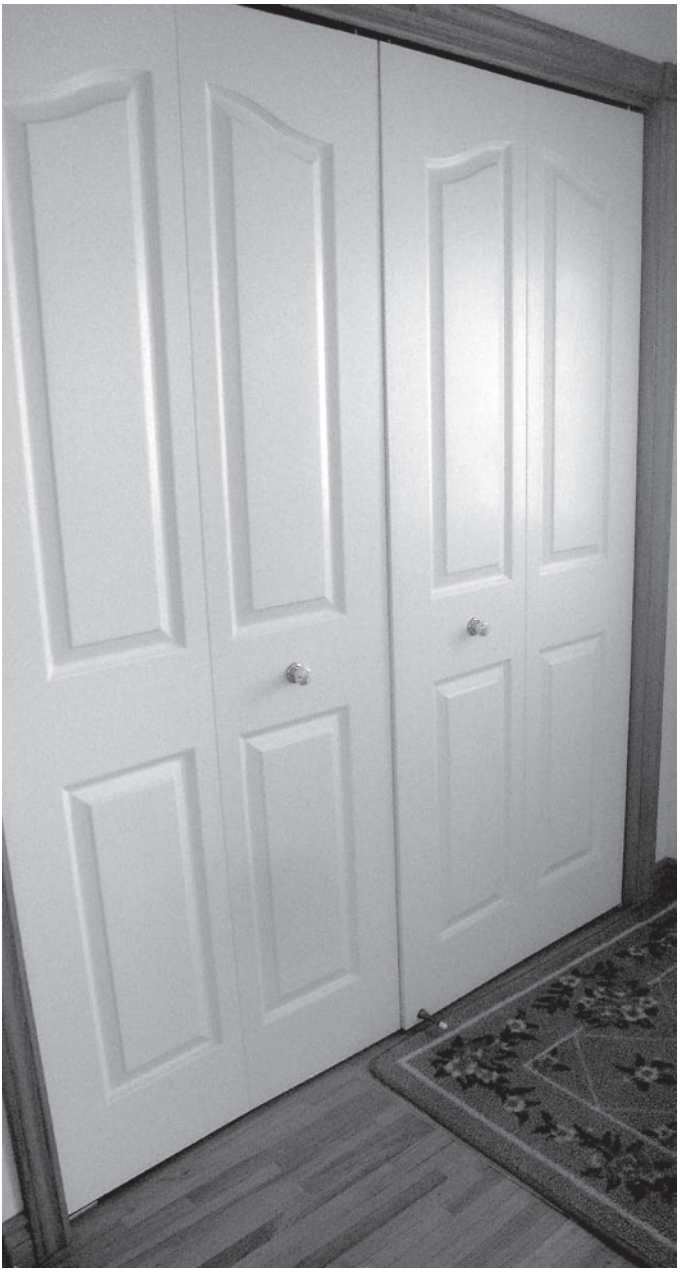


174. Placing plants in a line despite the presence of a large bush.



175. Cleaning the face of a child who is eating ice cream. Salisbury, England.

1.8. Oriented areas in a home



176-179. Coats, boots, shoes, and a basket of innersoles are perpendicular to the wall in a closet just inside the entrance of a home. Charlottetown, PEI.



177.

1.8. Oriented areas in a home continued



178.



179.

1.8. Oriented areas in a home continued



180-181. Circular dishes and wine glasses are organized by type and size inside a kitchen cabinet. Charlottetown, PEI.



181.

1.9. Oriented and disoriented areas in a home



182-184. Areas to the left side (which is oriented) versus the right side (which is disoriented) of a door.

183.
Oriented garbage cans and small rug.

1.9. Oriented and disoriented areas in a home continued



184. Disoriented cleaning equipment and bags of bird food.



185. Disoriented desk in a home.

1.9. Oriented and disoriented areas in a home continued



186. Oriented side of a bedroom.



187.
Disoriented side of the same bedroom with clothes strewn on a couch.

1.9. Oriented and disoriented areas in a home continued

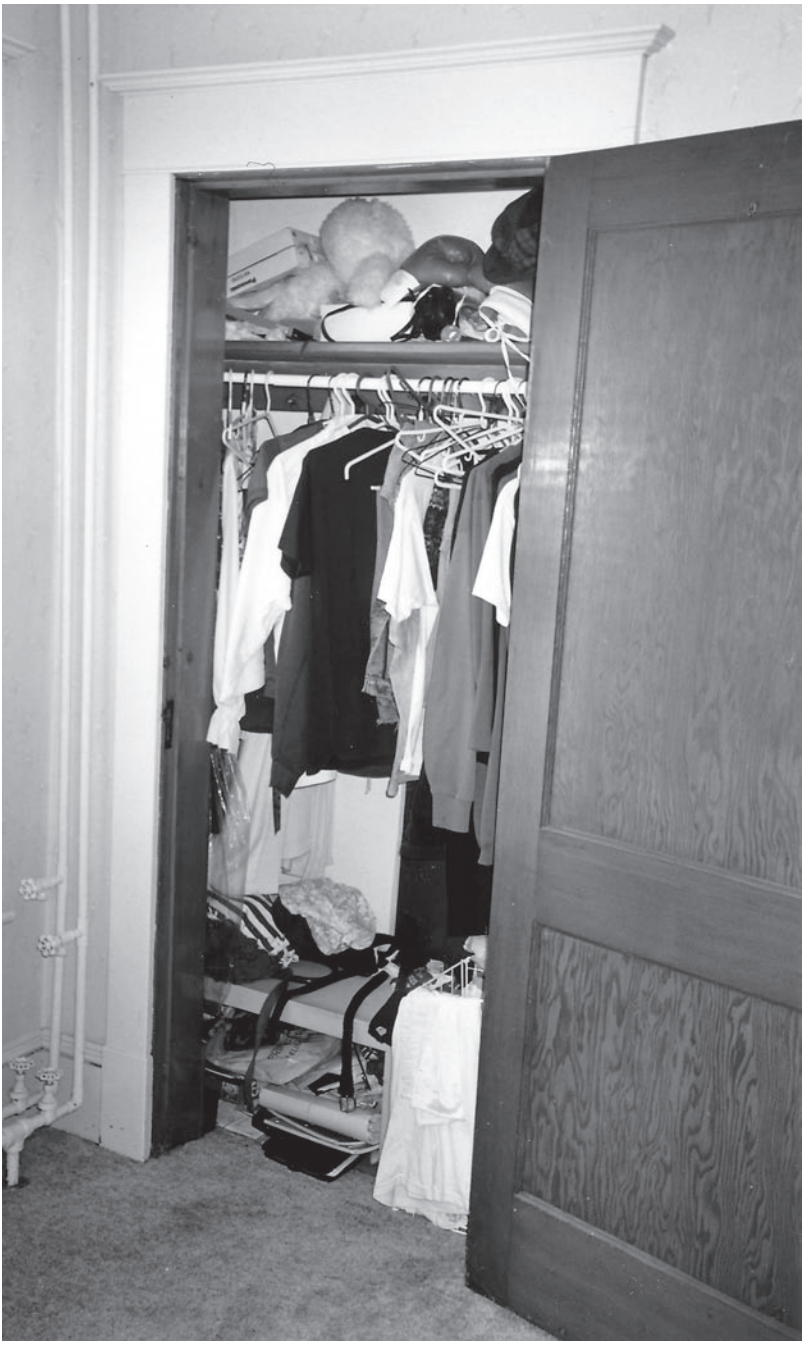


188. Oriented end of a hall in a home.



189. Disoriented opposite end of the same hall in a home.

1.10. Hiding disorientation behind a uniform surface

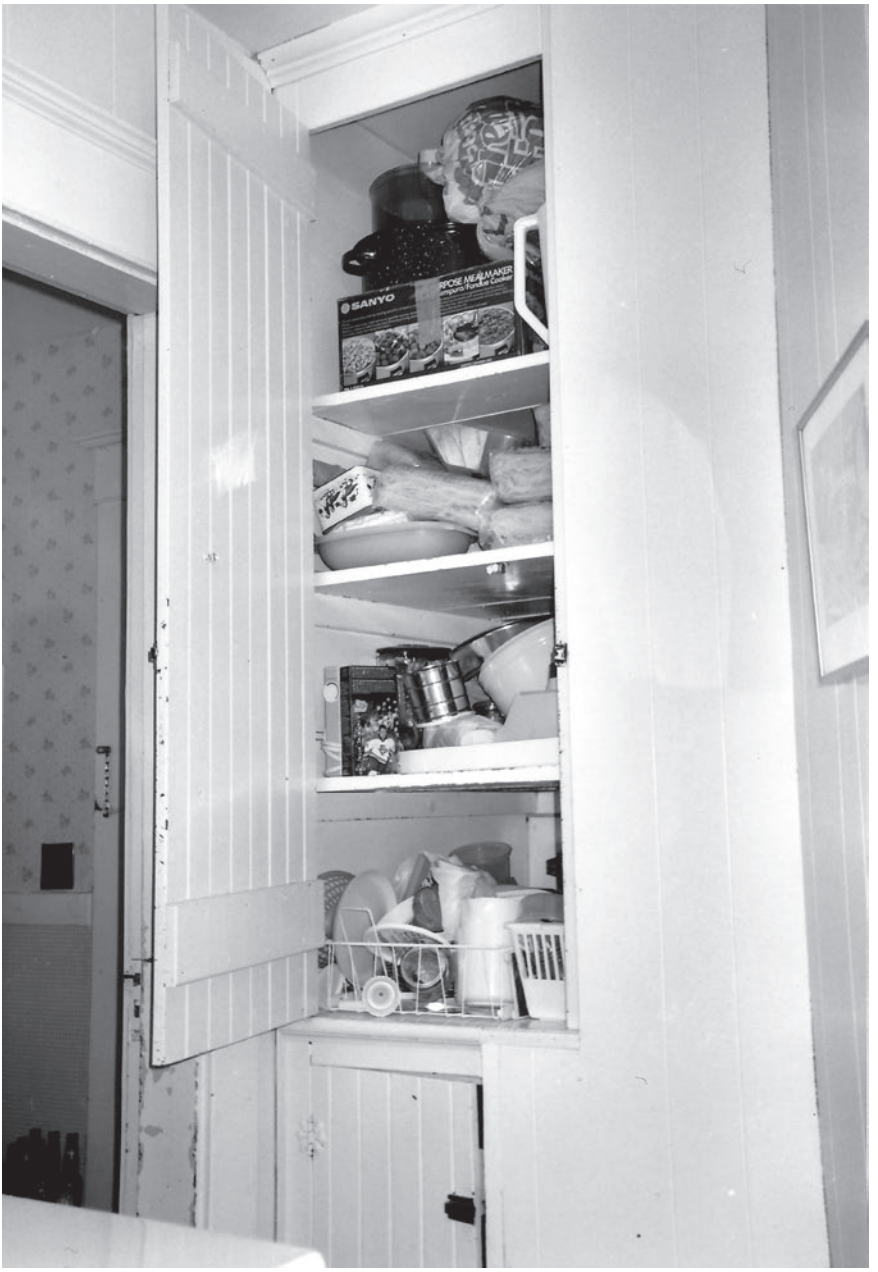


190.



190-191. Open and closed door of a clothes closet in a bedroom.

1.10. Hiding disorientation behind a uniform surface continued



192-193. An open and closed door of a pantry cupboard which contains kitchen paraphernalia.



193.

1.10. Hiding disorientation behind a uniform surface continued

194.





194-195. Open and closed drawer in a kitchen cabinet.

1.10. Hiding disorientation behind a uniform surface continued



196-197. Open and closed lids of garbage containers in a kitchen. The containers are opened with foot pedals, which are depressed with dumbbells in the photo above.



197.

1.10. Hiding disorientation behind a uniform surface continued



198-200. An open and closed door of a laundry room in a home.

199.

1.10. Hiding disorientation behind a uniform surface continued



200.

1.11. Oriented items on display for sale in stores



201-202. Arrangement of items on shelves in a kitchen goods store in Charlottetown. Notice the items have rectangular shapes, are folded into rectangles, and are placed parallel and perpendicular to the edges of the rectangular shelves. Items are also organized on the basis of similarity, and the ribbons used to hold items together are centered.

1.11. Oriented items on display for sale in stores continued



202.



203-204.
Clothing items separated by color, folded into rectangles, and arranged parallel and perpendicular to the edges of shelves in rectangular display cases in stores. Charlottetown, PEI.

1.11. Oriented items on display for sale in stores continued



204.



205. Racks of clothes crowded together in a department store can produce a feeling of discomfort. PEI.

1.12. Items that are rejected because they become disoriented



206. Box of recycling bags purchased at WalMart Department store.



207.
Box of recycling bags initially rejected at WalMart Department store because the box was disoriented (dented, not perfect). Subsequently the box was purchased to use for this photograph.

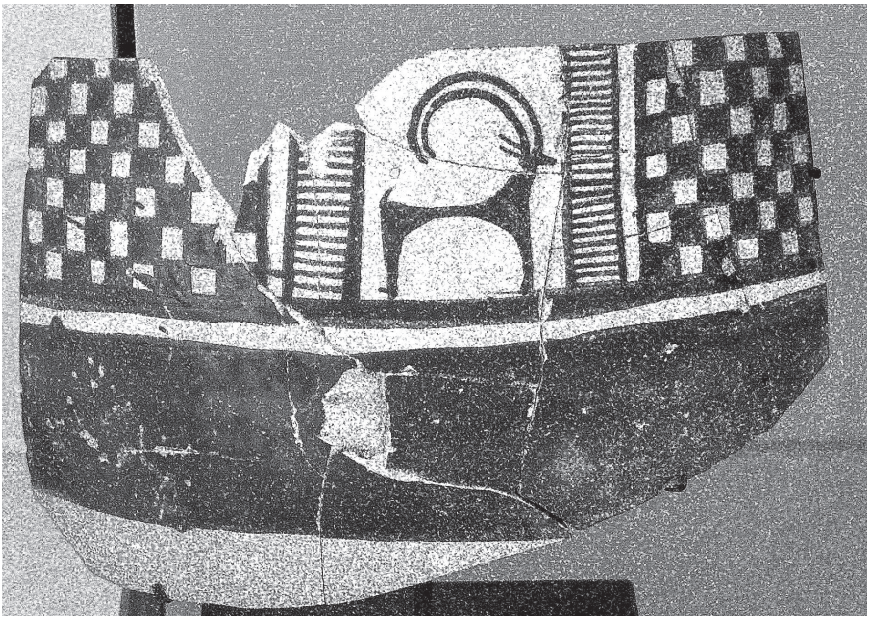
2. Rectangles

2.1. The Middle East 433
2.2. Europe 473
2.3. South Asia 525
2.4. Southeast Asia 527
2.5. East Asia 562
2.6. Oceania 584
2.7. The Americas 587

2.1. The Middle East



208. Rectangular features in a reconstruction of a room in Çatalhöyük, a Neolithic settlement from 7500 to 5700 BC. Museum of Anatolian Civilizations. Ankara, Turkey.



209. Ibex with checkerboard and ladder patterns. 4000 BC. The Louvre.



210. Checkerboard design on the neck of a vessel. Kultepe. Museum of Anatolian Civilizations.

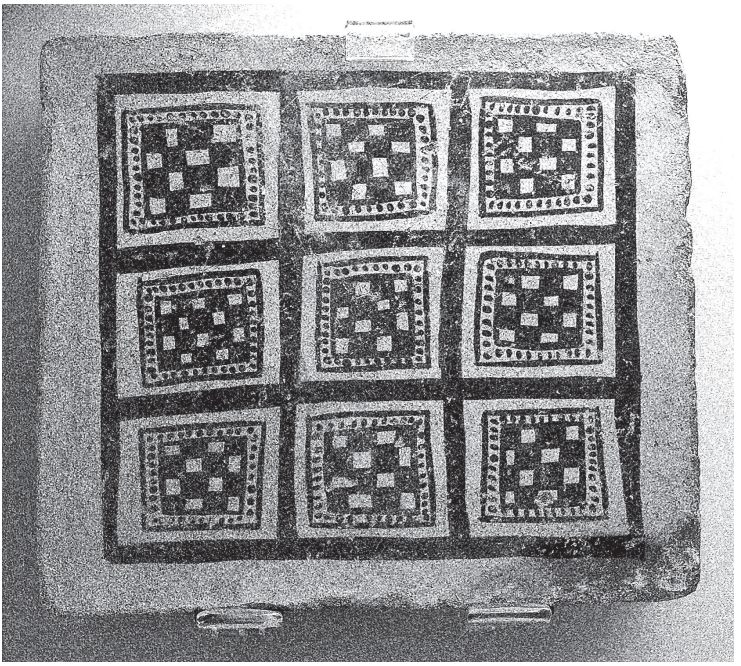


211. Checkerboard design on a Gordion pitcher. 8th - 7th century BC. Museum of Anatolian Civilizations.





212-213. Rectangular coffin from Tarkhan, Egypt, 3100 - 2890 BC. The British Museum.



214. Tile with rectangular patterns. 7th - 8th century BC, Iran. British Museum.



215-218.
Decorative rectangles at the funerary complex of Djoser. 2670 BC. Notice the use of repetition. Saqqara, Egypt.

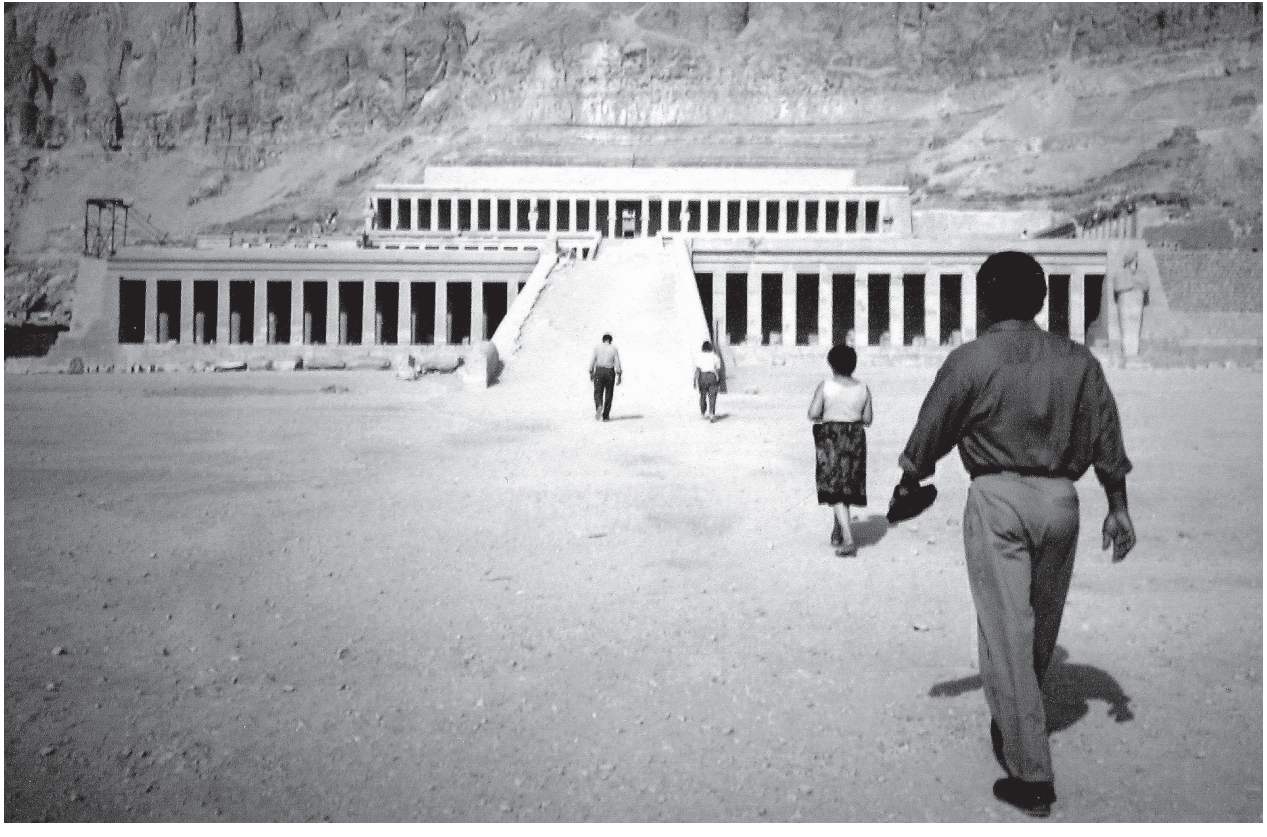


216.

217.



218.



219. Repeated rectangular openings in Queen Hatshepsut's mortuary temple. 15th century BC. Deir el-Bahri, Egypt. M.E.



220. Rectangular rooms, doors, and platforms. Deir el-Medina, or the artisan's village. 1500 - 1080 BC. Thebes, Egypt.



221-222. Rectangular containers at the Cemetery for Sacred Rams. Khnum Temple, Elephantine Island, Egypt.





223-224.
Rectangular panels in Trajan's Kiosk. Agilkia Island, Egypt.



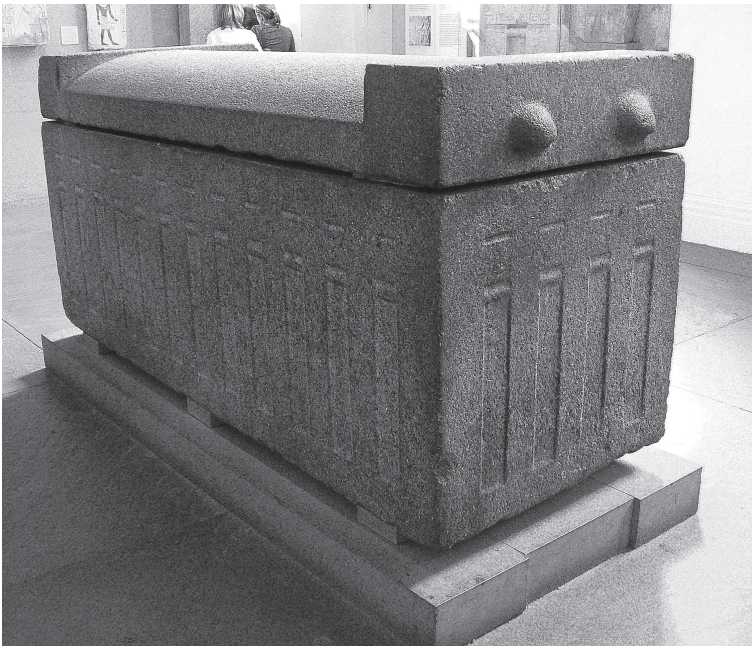
225.
"Ancient Egyptian" working with rectangular bricks. The sign says, "House Construction." Dr. Ragab's Pharaonic Village, Cairo, Egypt.



226-227. "Ancient Egyptian" uses a rectangular grid to produce a design. Dr. Ragab's Pharaonic Village, Cairo, Egypt.

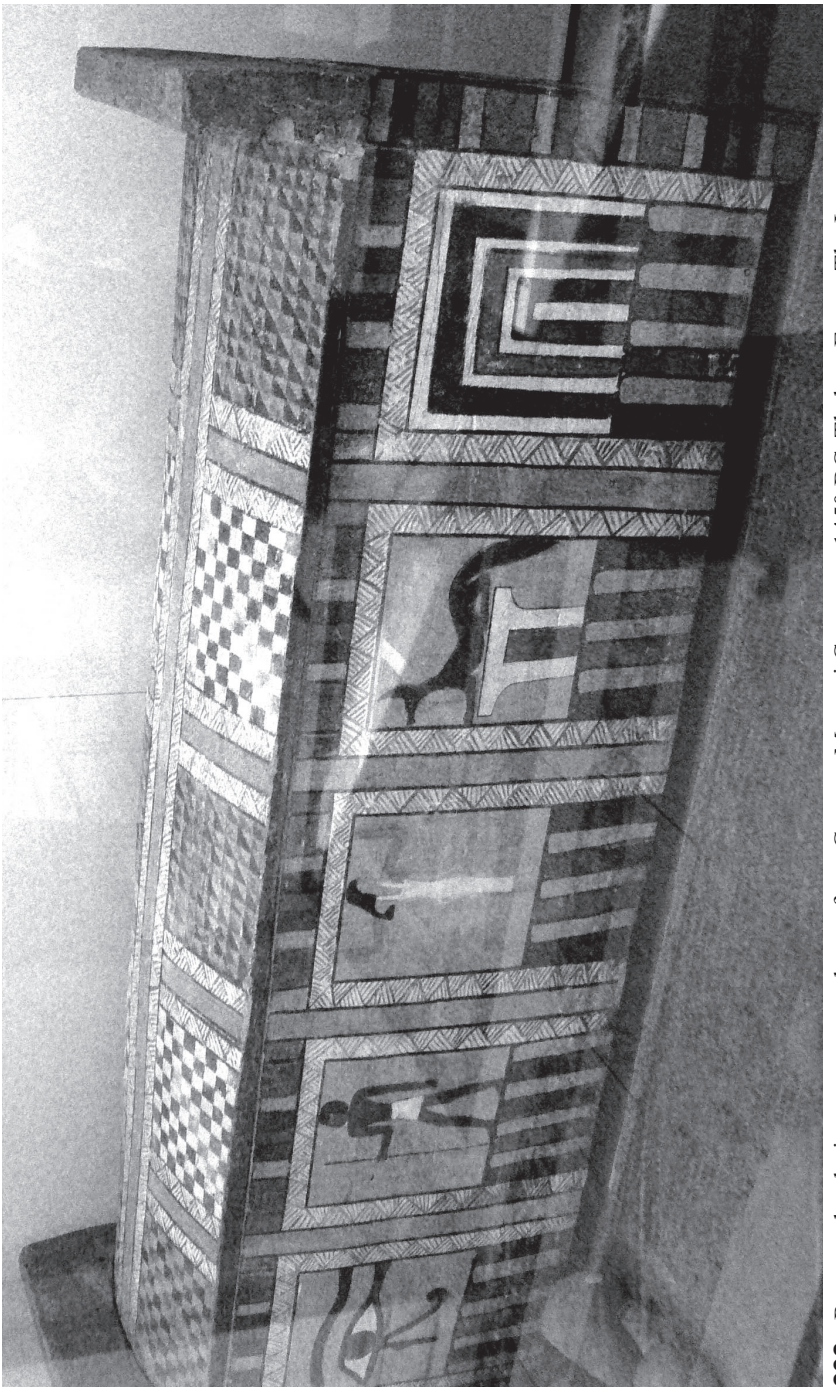


228-229.
"Ancient Egyptian" uses a rectangular grinding stone.
Dr. Ragab's Pharaonic Village, Cairo, Egypt.



230-231. Rectangular sarcophagus decorated with repeated, equidistant rectangles. 3rd millennium BC, Egypt. Notice that the sarcophagus has been placed on a rectangular platform. The British Museum.

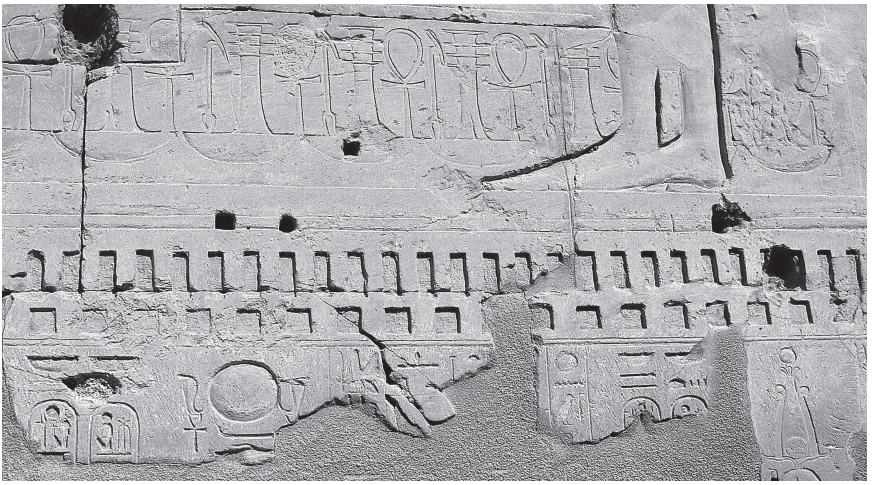




232. Rectangular designs on a sarcophagus from Gournet Mourrai Cemetery. 1450 BC, Thebes, Egypt. The Louvre.



233. Rectangular bricks used in the construction of walls and columns. Karnak, Luxor, Egypt.



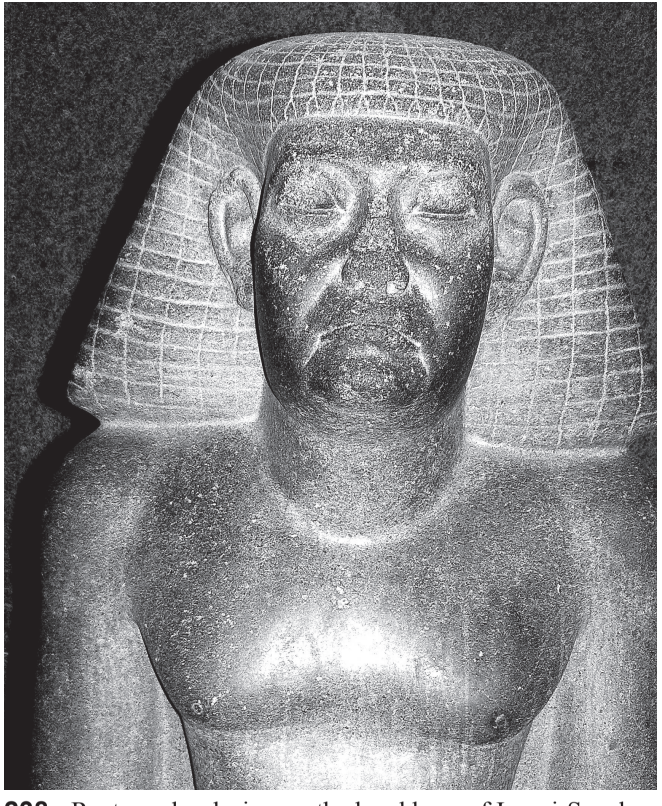
234-235. Repetitive and equidistant rectangles on a wall. Karnak, Egypt.





236-237. Design that uses repeated vertical rectangles. Karnak, Egypt.



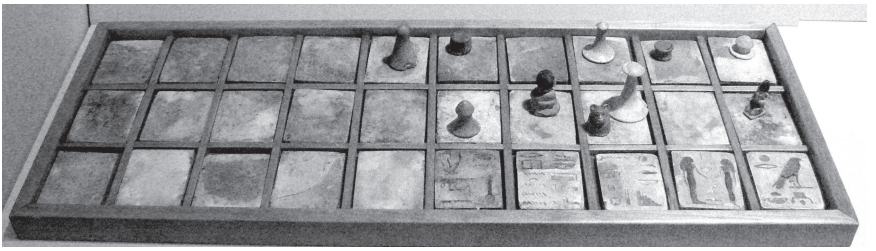


238. Rectangular design on the headdress of Imeni-Seneb, governor of Elephantine. 2nd millennium BC. The Nubian Museum, Aswan, Egypt.

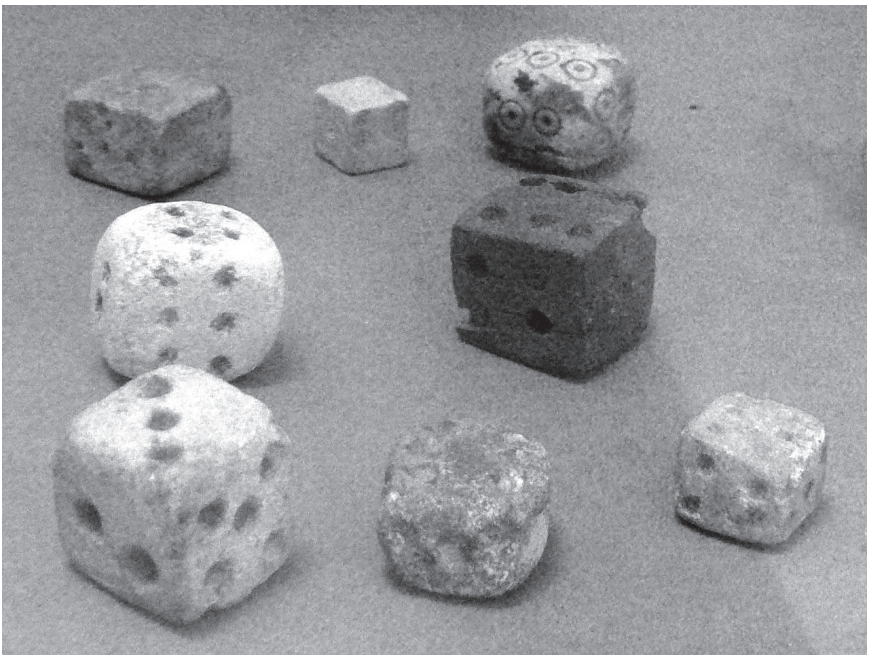


239. Rectangular window on the tomb of Minnakht, who is worshiping the sun. 1320 BC. The Louvre.

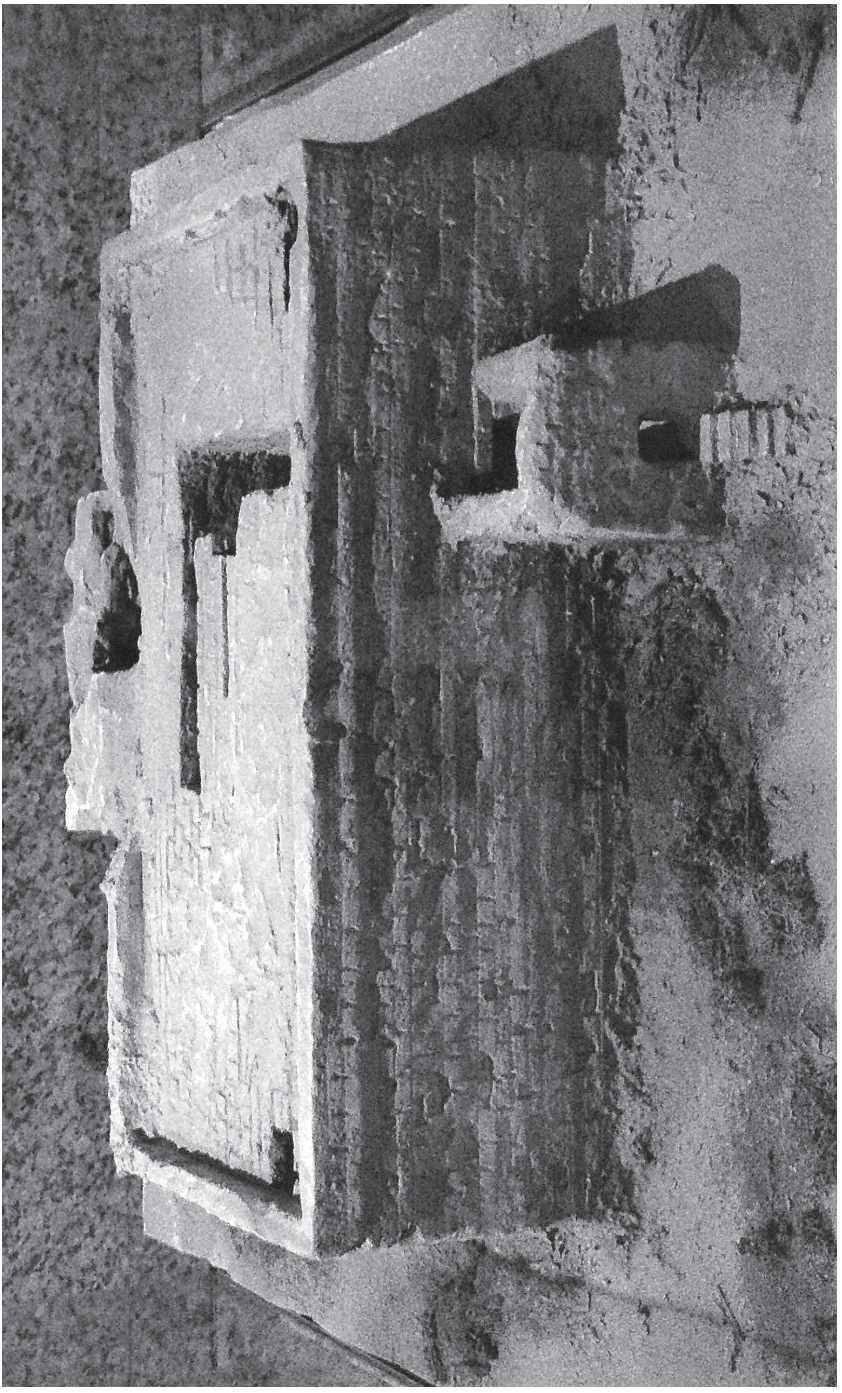
240. Rectangular design of an offering table. About 300 BC. Hermonthis, Egypt. The British Museum.



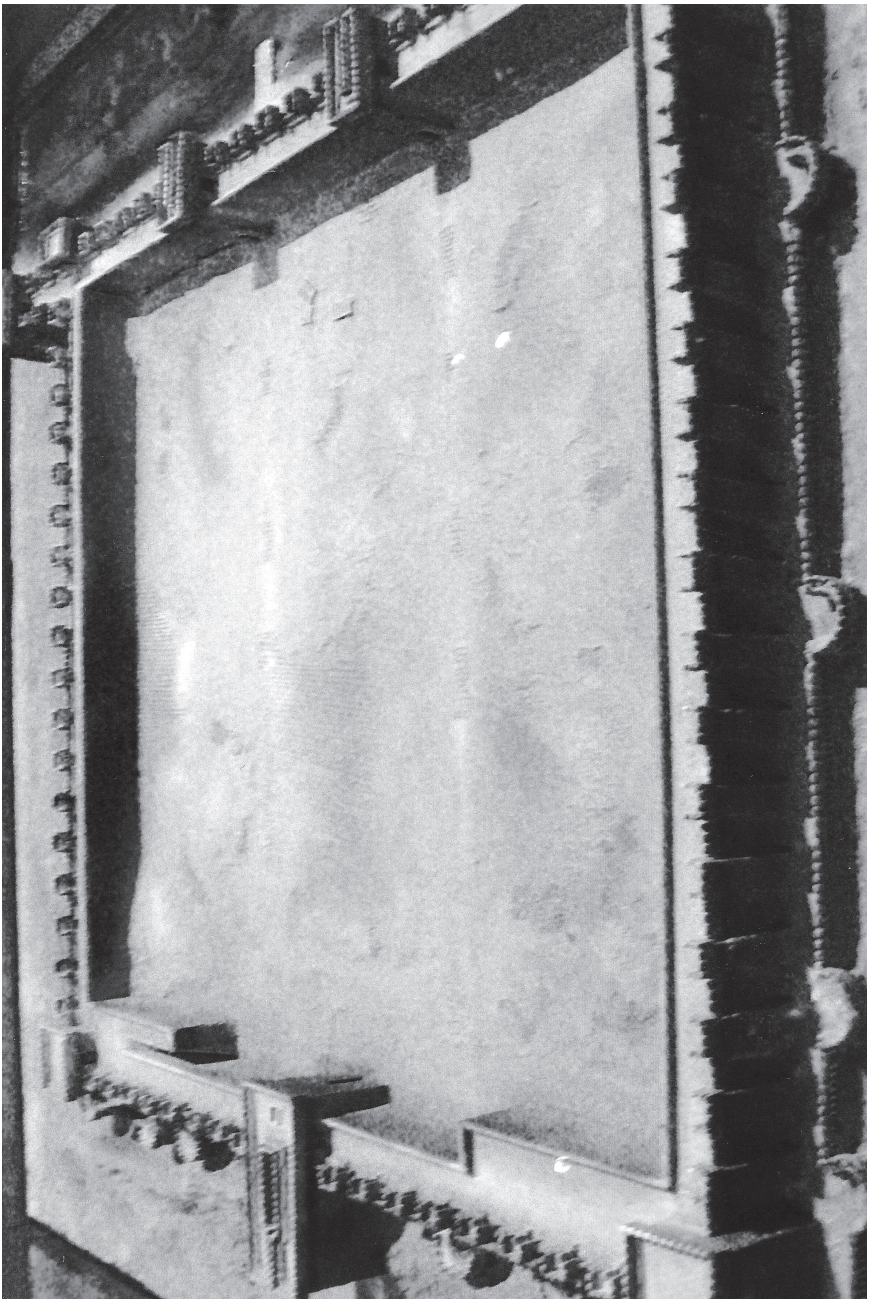
241. Rectangular design of a game board for playing senet. 13th century BC, Egypt. Royal Ontario Museum, Toronto, Ontario.



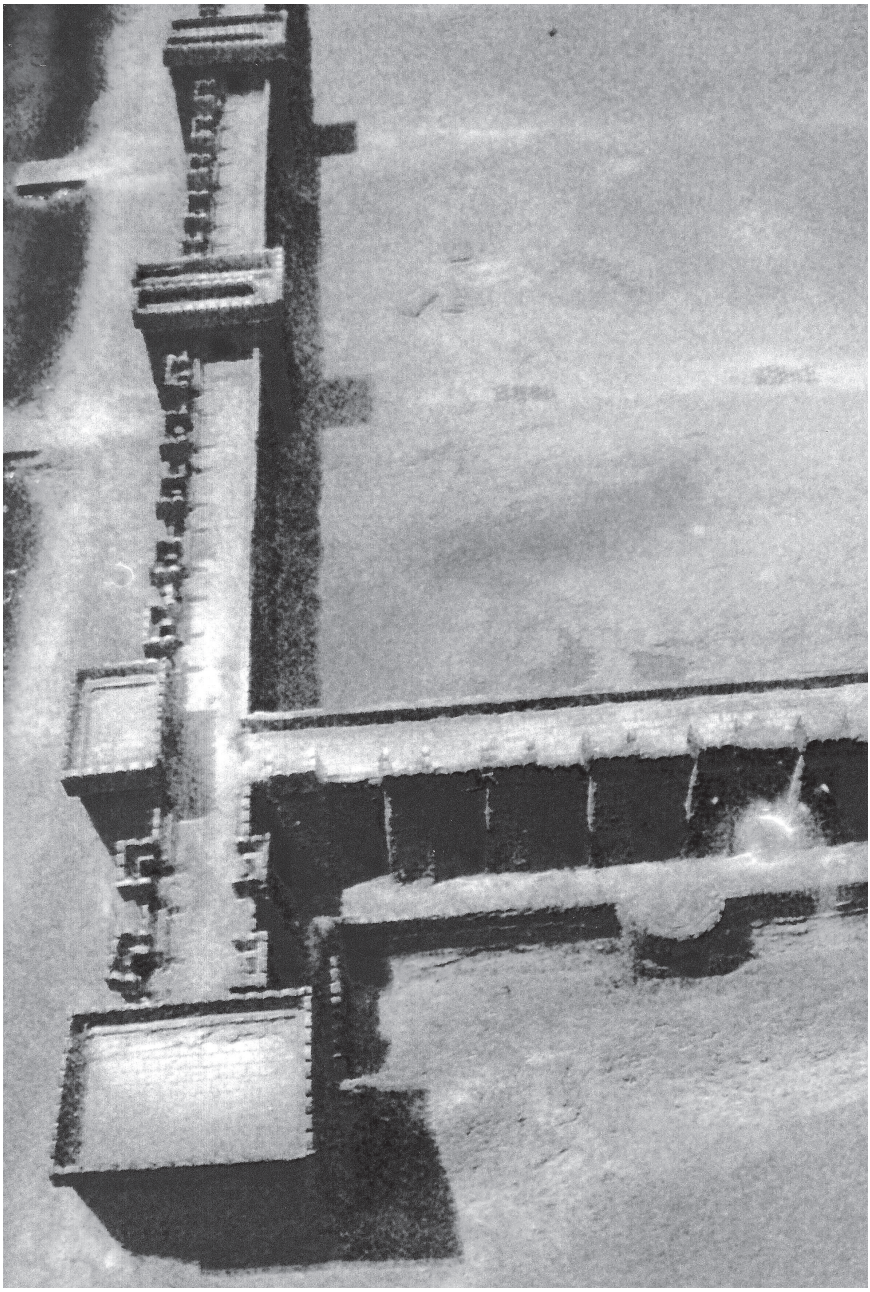
242. Rectangular dice. The Louvre.



243. Model of a rectangular brick building of Kerma (Deffufa). 3rd millennium BC. The Nubian Museum, Aswan, Egypt.



244.



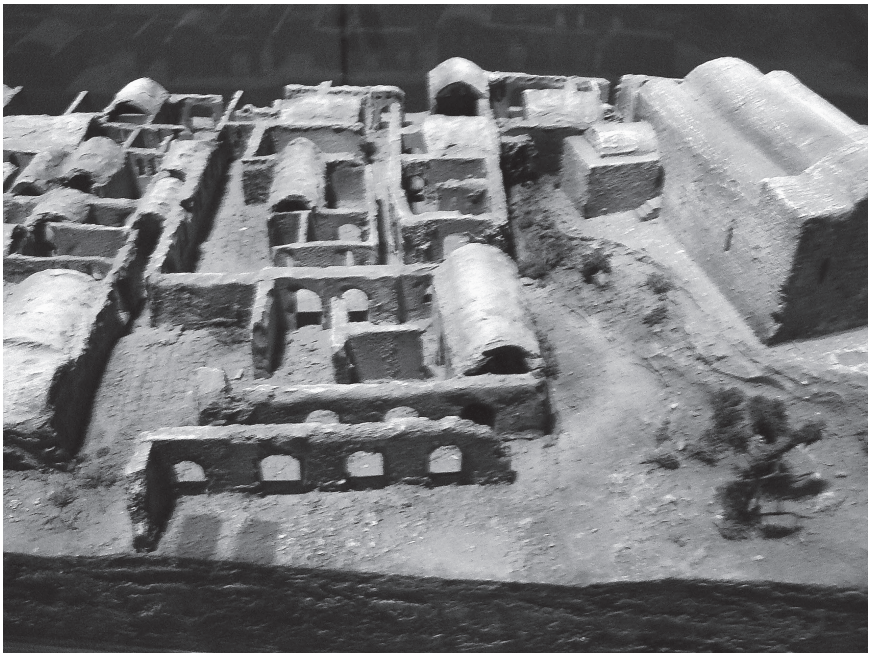
244-245. Rectangular fortress and defensive platforms. Model of Buhen Fortress. 1875 BC. The Nubian Museum.



246-248. Rectangular design and parallel and perpendicular arrangement of dwellings in Ikhmindi, an early Nubian fortified community. Model in the Nubian Museum.

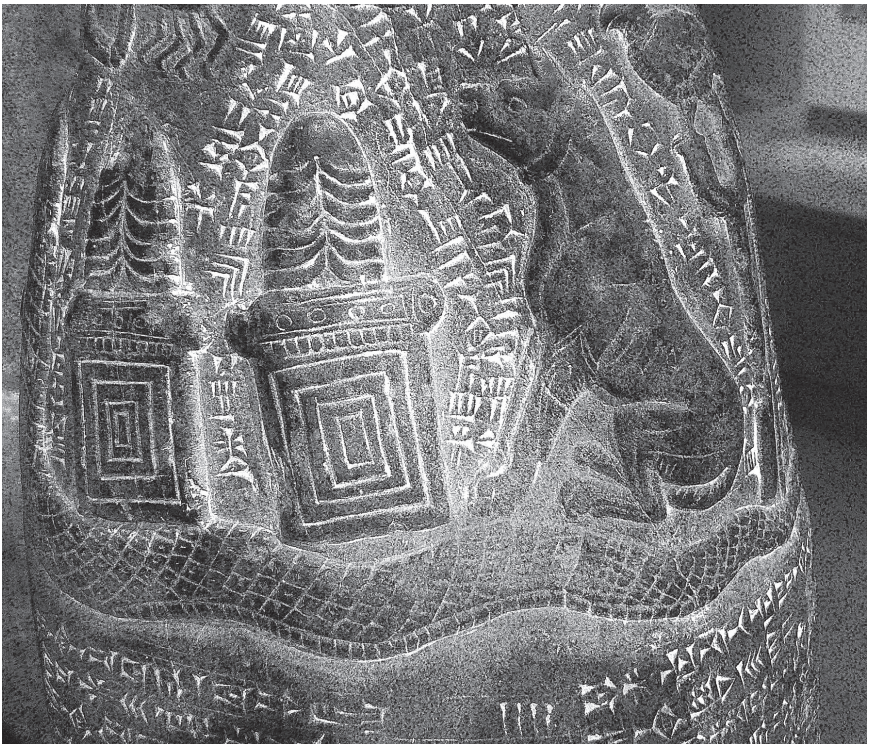


247-248.





249-250.
Stone marker of land ownership which includes rectangular designs.
11th century BC, Babylon.
The British Museum.





251. Repeated rectangles in the design of a censer. Notice the use of centering and symmetry. Istanbul Archaeological Museum.



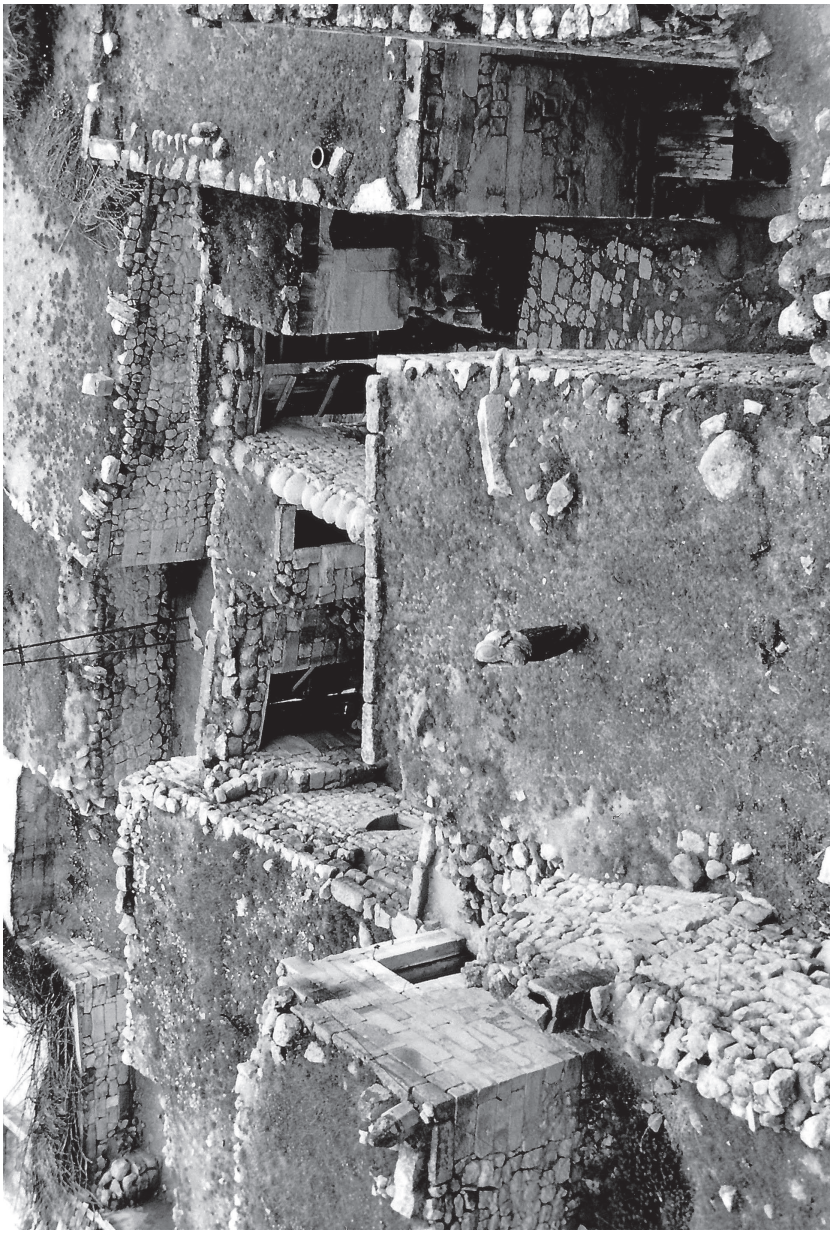
252.
Face in a rectangular "window." Notice the use of repetition, consistency, and centering. 8th century BC. Ivory of Arslan Tash, Syria. The Louvre.



253. Plaque with a view of the rectangular Kaaba in Mecca. Notice the use of repetition and partial symmetry and that the Kaaba is centered between the two sides of the plaque. 17th century, Turkey. The Louvre.



254-256. Rectangular sections of crops. Nile Valley, Egypt.



257. Rectangular rooms, walls, and doors. Gormé Valley area, Turkey. H.S.



258.
Rectangular foundations. Nile Valley, Egypt.



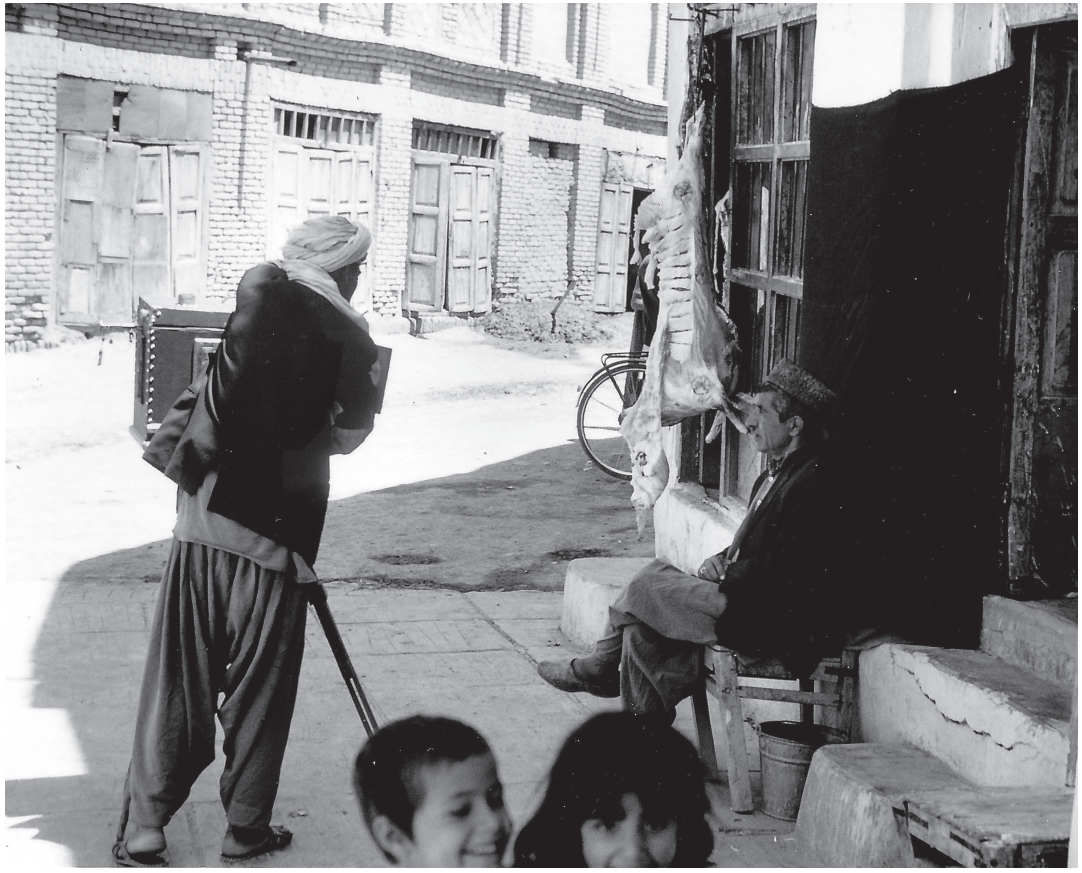
259. Rectangular water tower. Nile Valley, Egypt.



260. Rectangular ponds. Egypt.



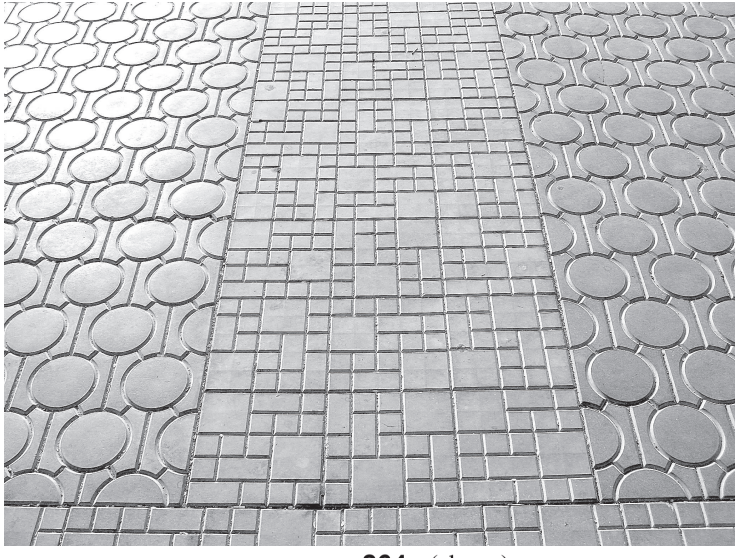
261. Rectangular pavilion used to protect goats from the hot sunlight. Thebes, Egypt.



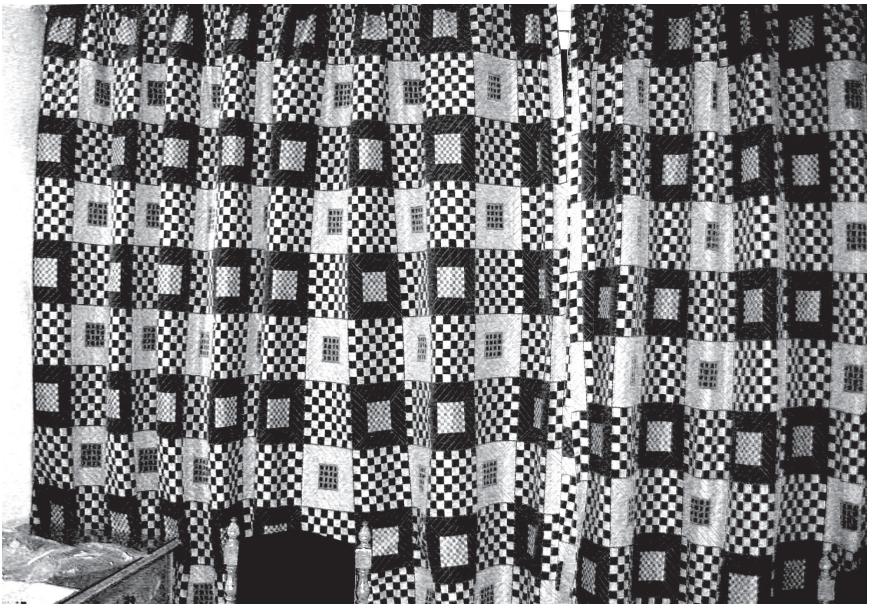
262.
Rectangular panels in doors. A photographer is standing outside a butcher's shop. Herat, Afghanistan. H.S.



263. (left)
Decorative rectangles incised into marble. Hotel lobby in Luxor, Egypt.



264. (above)
Rectangular and circular designs on a sidewalk. Luxor, Egypt.



265-266. Rectangular designs on window curtains and a bedspread in a hotel room. Cairo, Egypt.





267. Rectangular toilet with rounded corners. Cairo, Egypt.

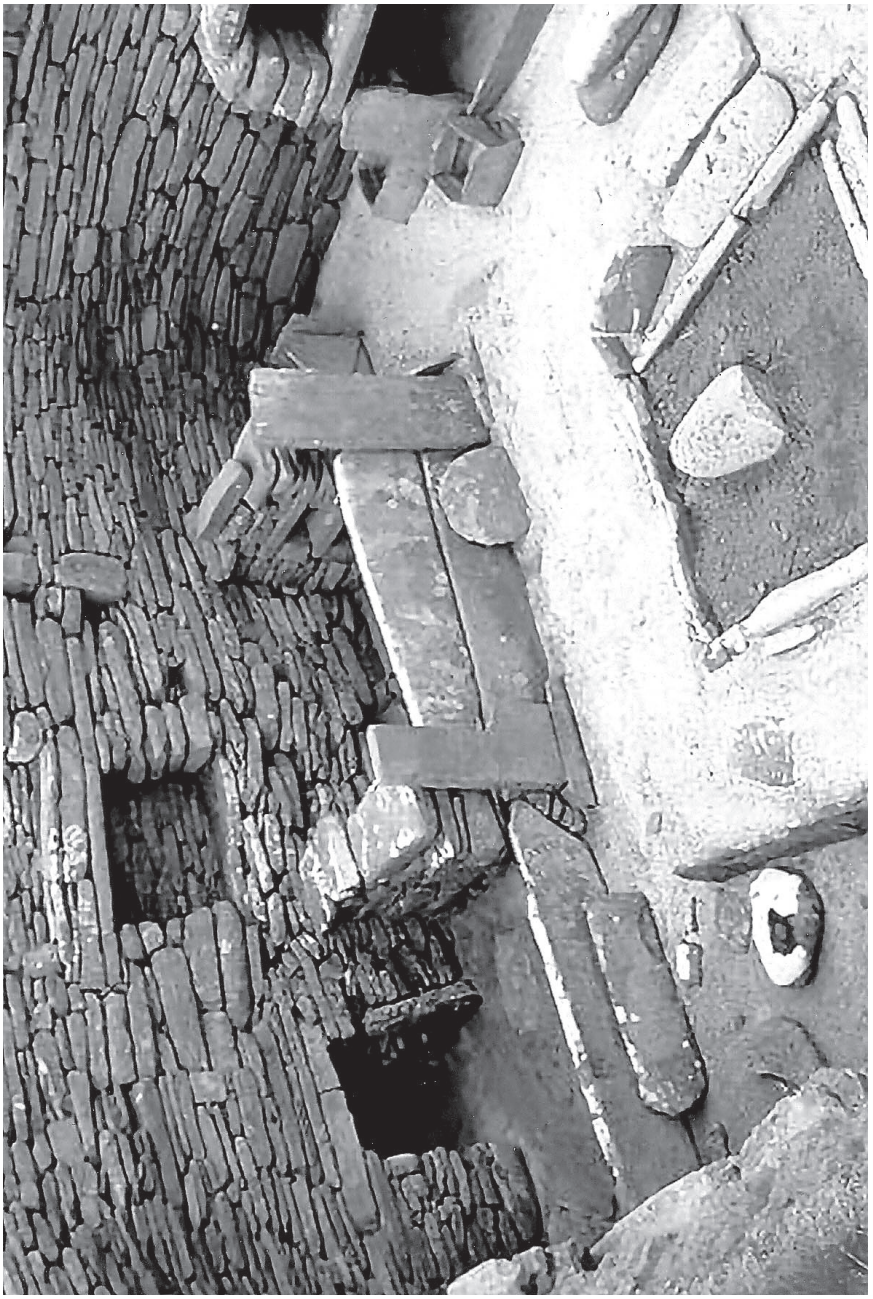
2.2. Europe



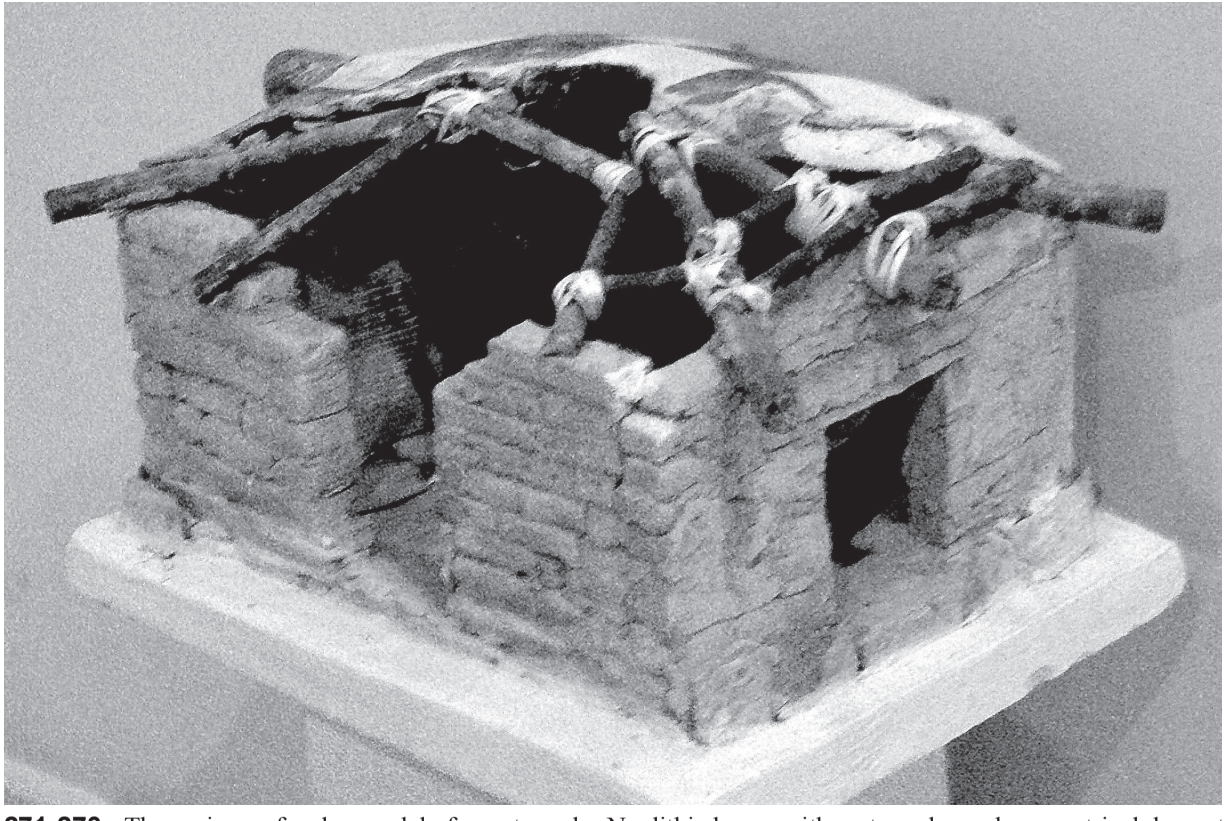
268-270. Rectangular stone furniture. Notice that the arrangement of the furniture is parallel and perpendicular. 3180 - 2500 BC. Skara Brae, Orkney. B.J.



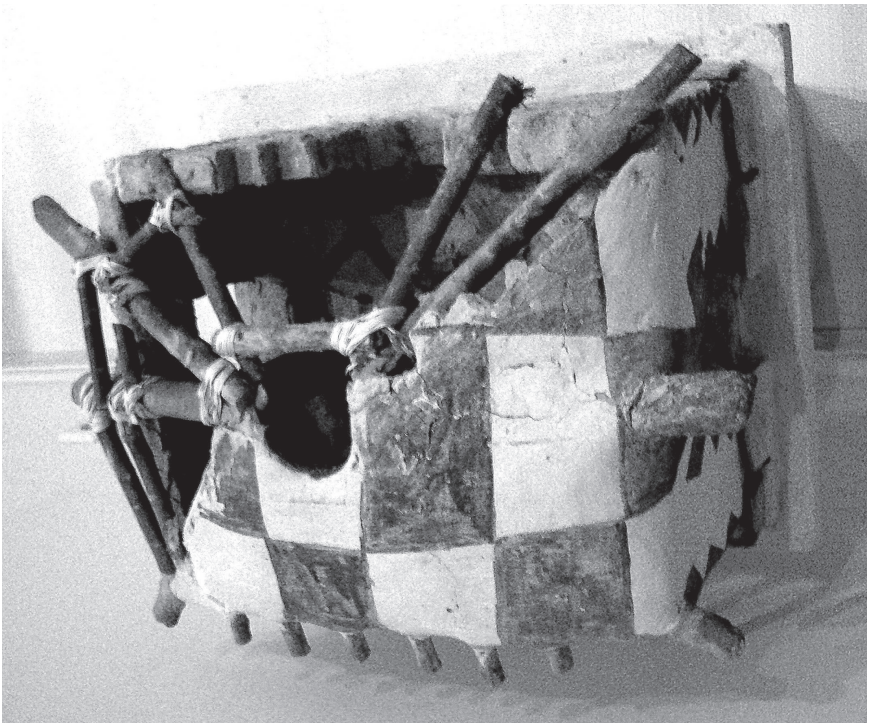
269.

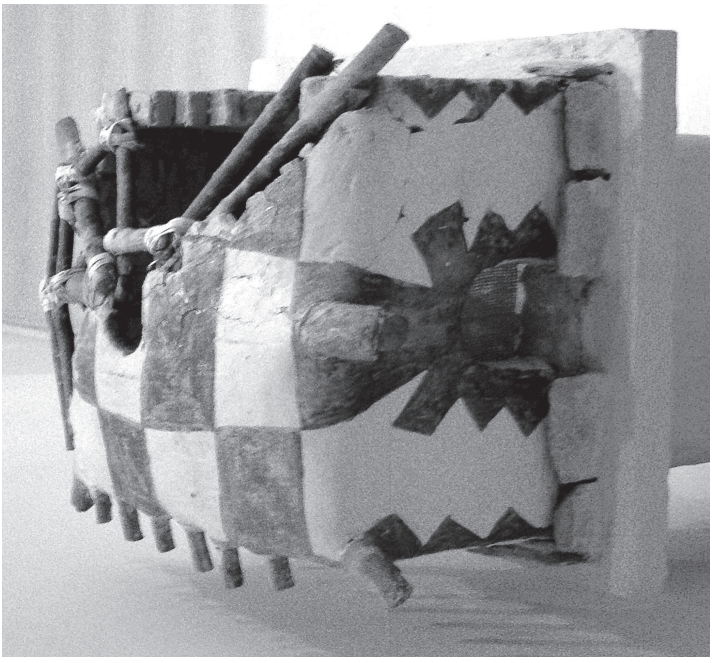


270.



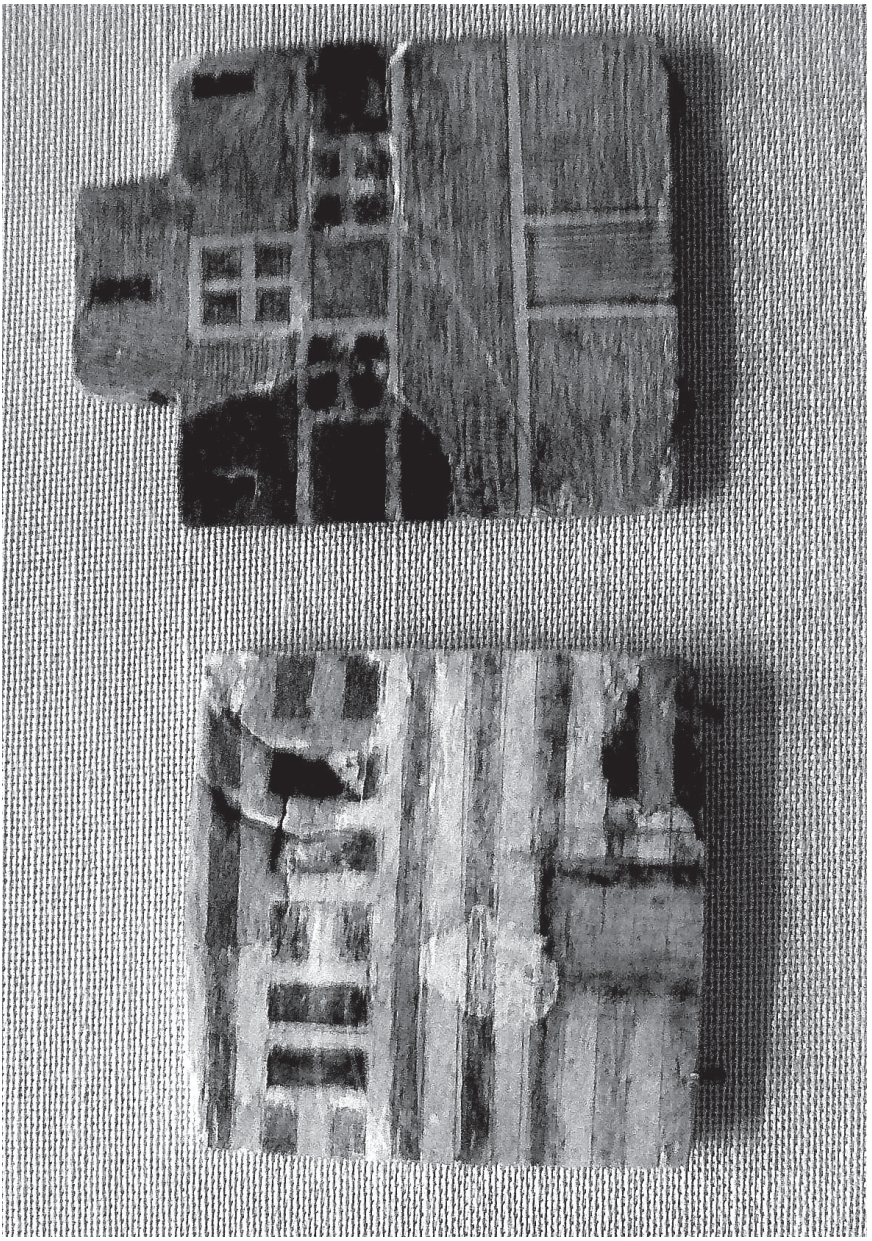
271-273. Three views of a clay model of a rectangular Neolithic house with rectangular and symmetrical decoration. 5800 - 5300 BC. Volos Archaeological Museum, Volos, Greece.



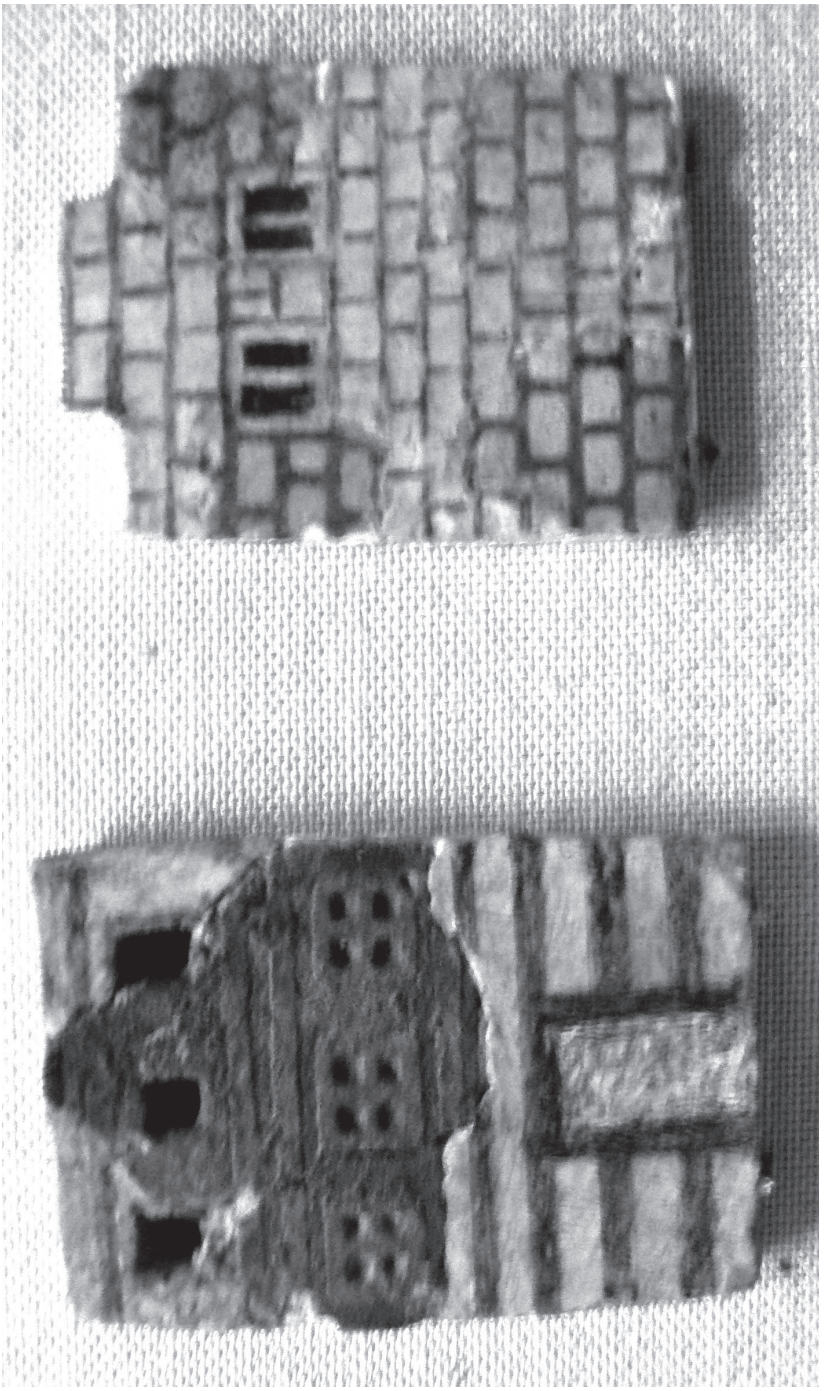


272-273.

274-276. Rectangular windows, doors, construction materials, and designs on house replicas. Notice the use of symmetry and horizontal lines. Town Mosaic plaques from Knossos, Crete. 2nd millennium BC. Heraklion Archaeological Museum, Crete.



275.



276.



277. Rectangular structure with rectangular windows and designs. Knossos, Crete.



278. Rectangular room. Knossos, Crete.



279. Rectangular storage compartments, or magazines. Knossos, Crete.



280. (left) Vase from Arkades with rectangular designs. Notice the use of repetition. Heraklion Archaeological Museum.



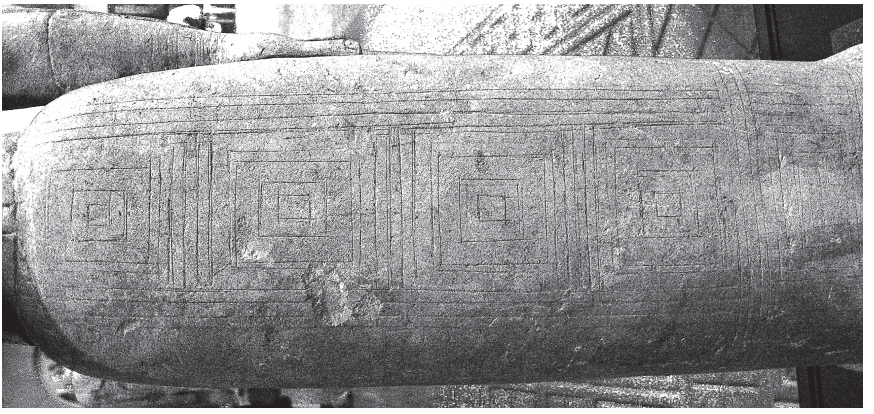
281. (right) Vase from Phaestos with rectangular designs. Heraklion Archaeological Museum.



282-285.
Rectangular designs on the skirt. Notice that the designs are centered. Dame d'Auxerre, 7th century BC, Crete. The Louvre.





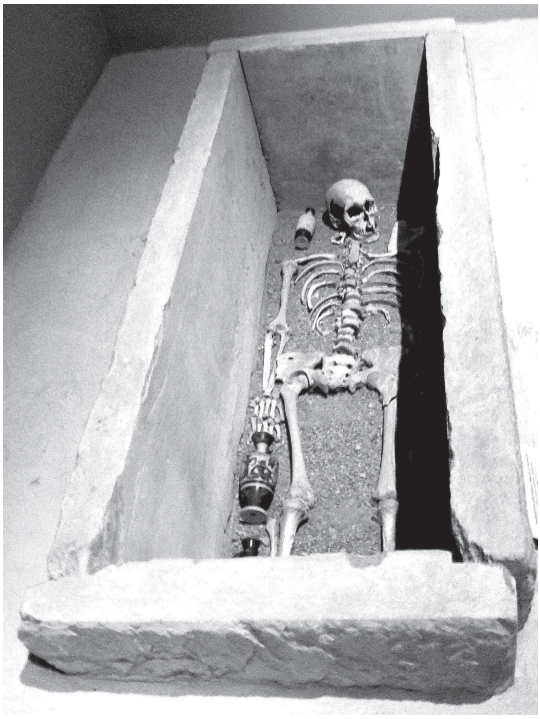


283-285. Three detailed views of rectangles on the skirt of Dame d'Auxerre.



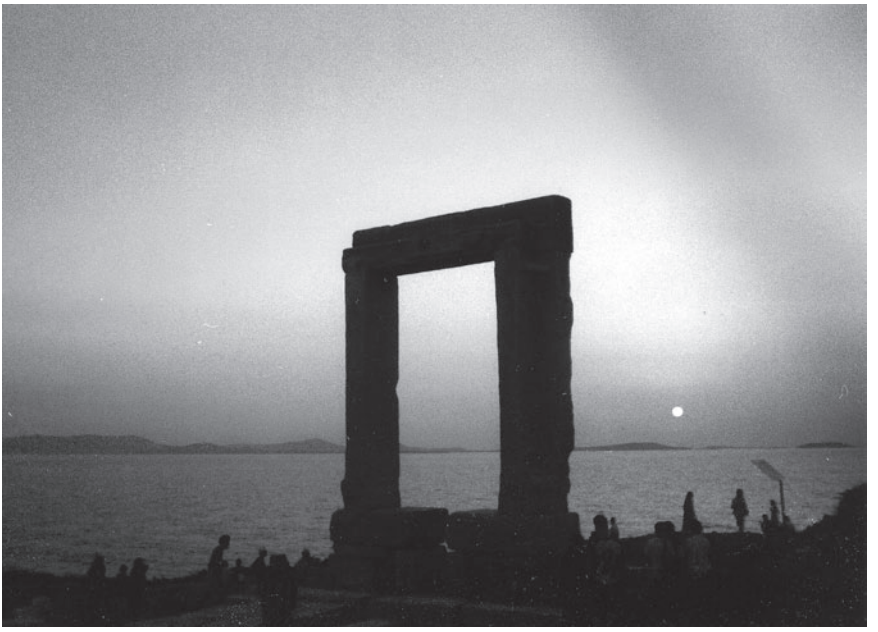


286-287. Rectangular cist grave. From Dimini, 2000-1600 BC.
Notice the circular pottery. Volos Archaeological Museum, Greece.



288-289.
Rectangular cist graves. From Proerna (Larissa) on the left, 5th century BC. From Thessaly below, 14th century BC. Notice the circular pottery. Volos Archaeological Museum, Greece.





290. Rectangular stone structure. Portára Gateway, Temple of Apollo. Naxos, Greece. E.T.



291. Rectangular containers. Volos Archaeological Museum, Greece.



292. Rectangular "rooms." Notice the parallel and perpendicular walls. Temple of Apollo, Delphi, Greece. E.T.



293. Rectangular speaker's platform. Stoa of Attalus, Athens, Greece.

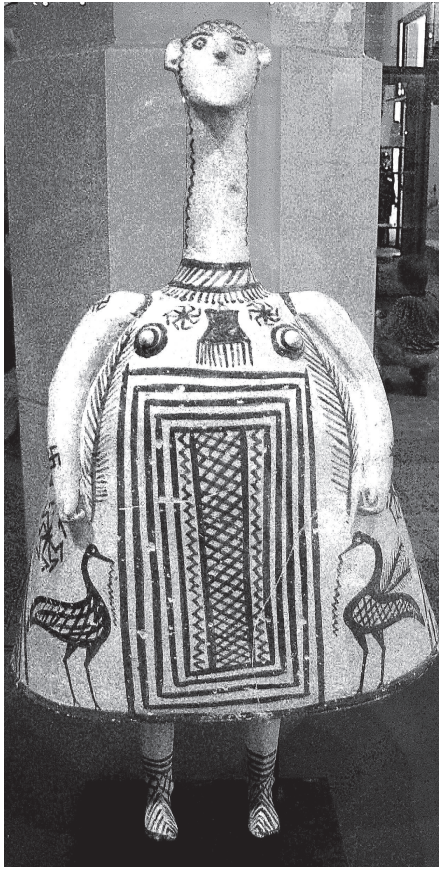


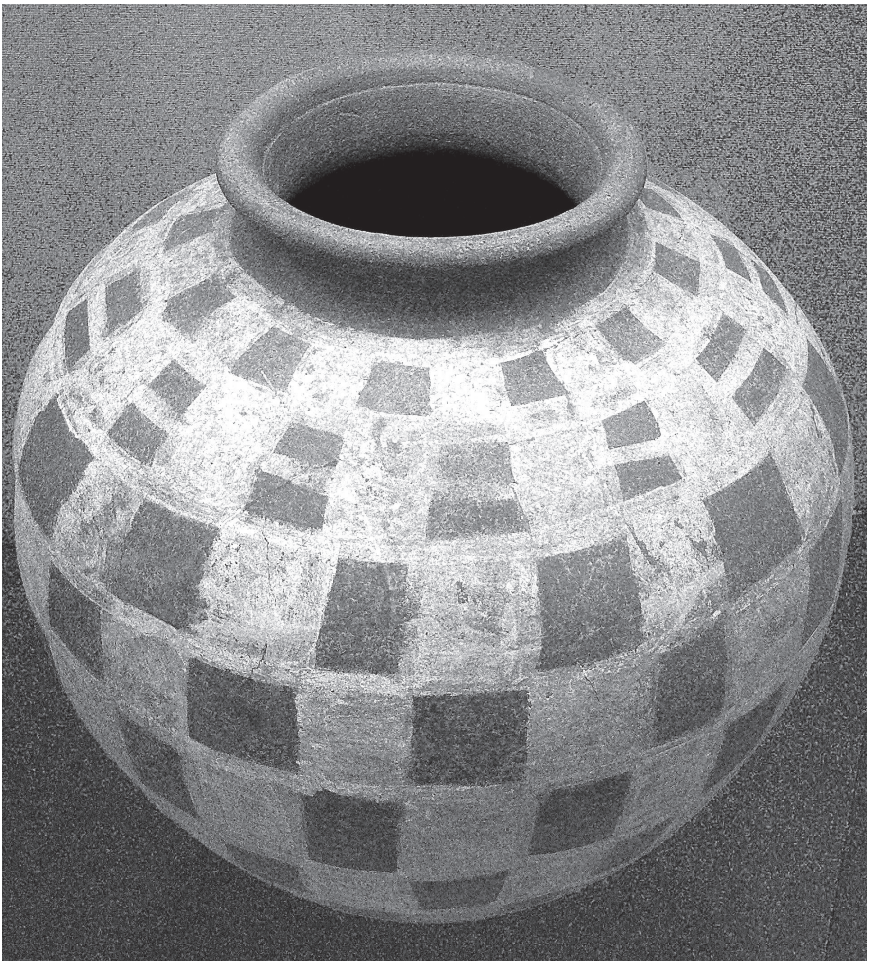
294. Rectangular opening. The marker states, "Container for offerings to the dead, 5th century BC." Stoa of Attalus, Athens, Greece.



295. (left)
Rectangular design on
a figurine possibly from
Boeotia, 560-550 BC.
The Louvre.

296. (right)
Figure with a centered
rectangular design.
Notice the use of symmetry.
About 700 BC, Boeotia.
The Louvre.





297. Repeated rectangles on an Etruscan jar. 1st millennium BC. The British Museum.



298. Rectangular openings. Pompeii, Italy.



299. Rectangular pool at a home. Pompeii, Italy.



300. Rectangular pool and skylight in a home. Notice their parallel and perpendicular placement. Pompeii, Italy.

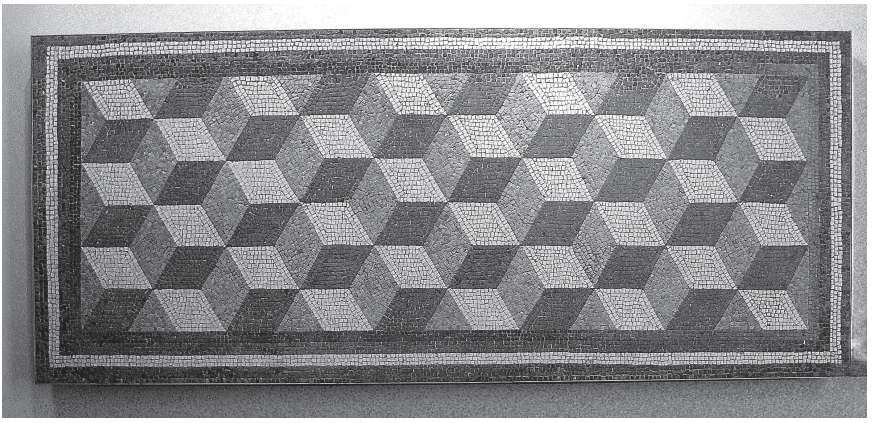


301-302. Rectangular fountain. Pompeii, Italy.

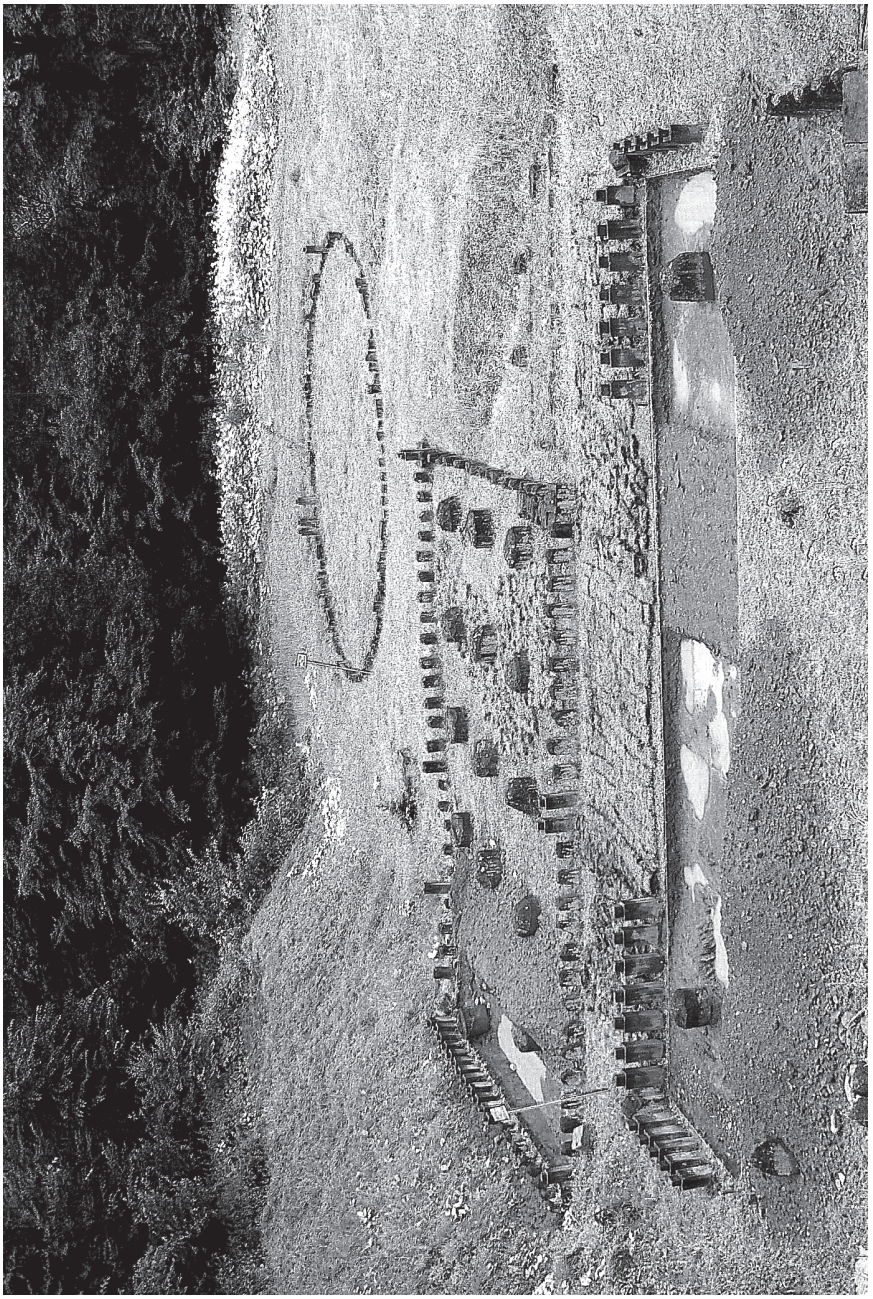




303. Repetitive designs and rectangular borders surrounding the head of Medusa. From Pompeii. Naples Archaeological Museum, Naples, Italy.



304. Rectangular mosaic from a Roman villa. 1st century BC. Naples Archaeological Museum.



305.

306.

305-308. Remains of rectangular structures. 1st century AD. Dacia, Sarmizegetusa Regia, Romania.



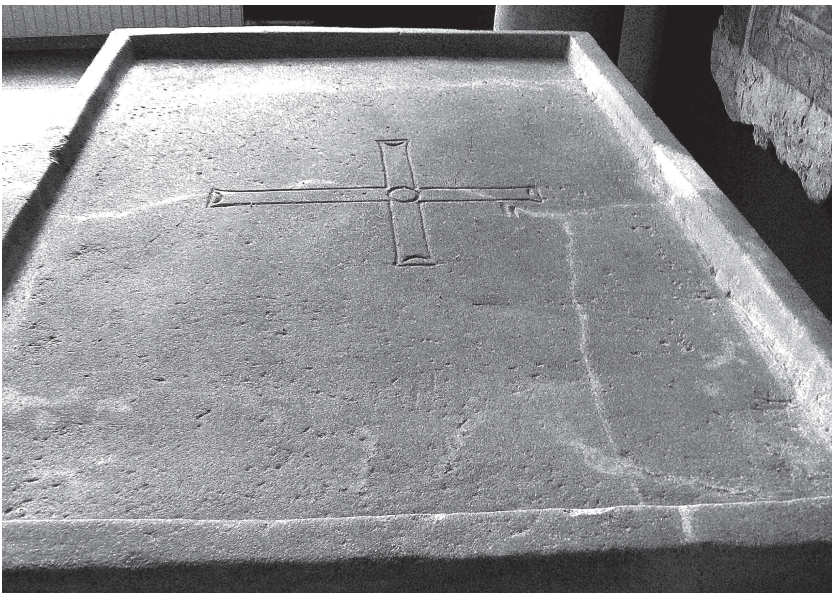
307. Rectangular indentations in a circular structure. 1st century AD. Dacia, Sarmizegetusa Regia, Romania.

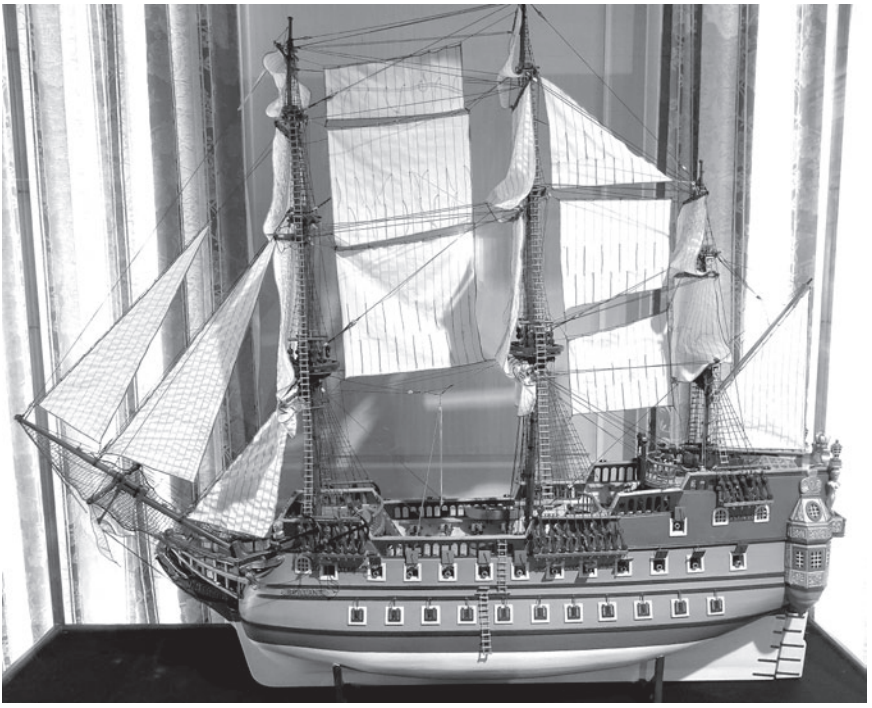


308. Road constructed of rectangular bricks. 1st century AD. Dacia, Sarmizegetusa Regia, Romania.

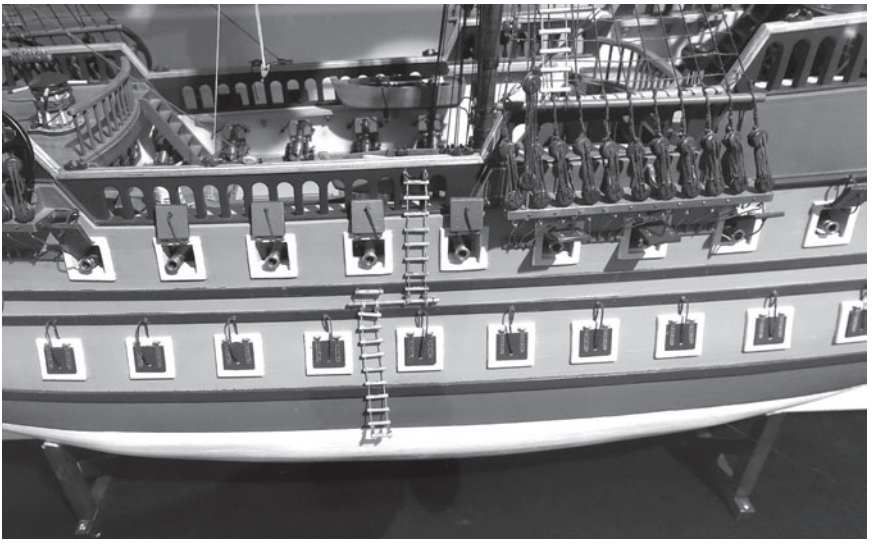


309-310. Rectangular religious equipment from the Odessos area. 4th - 6th century AD. Varna Museum of Archaeology. Varna, Bulgaria.





311-312. Rectangular gun ports on a model of the ship, Brilliant, which was built in 1689-1690 at Le Havre, France, during the reign of King Louis XIV. This model is at Fortress Louisbourg, Nova Scotia.





313-315. Placement of art within rectangular frames on a ceiling and door. Notice the use of symmetry on the ceiling. The Vatican, Rome, Italy. H.S.



314.



315.



316.
Paintings presented in rectangles. Rectangular design on the floor. Notice the use of circles for halos.
Holy Trinity Cathedral, Russian Orthodox Church. Petropavlovsk, Kamchatsky, Russia. H.S.



317. Rectangular design of the memorial and plaza. Notice that the figure on top is centered. Landhausplatz, Innsbruck, Austria. B.C.



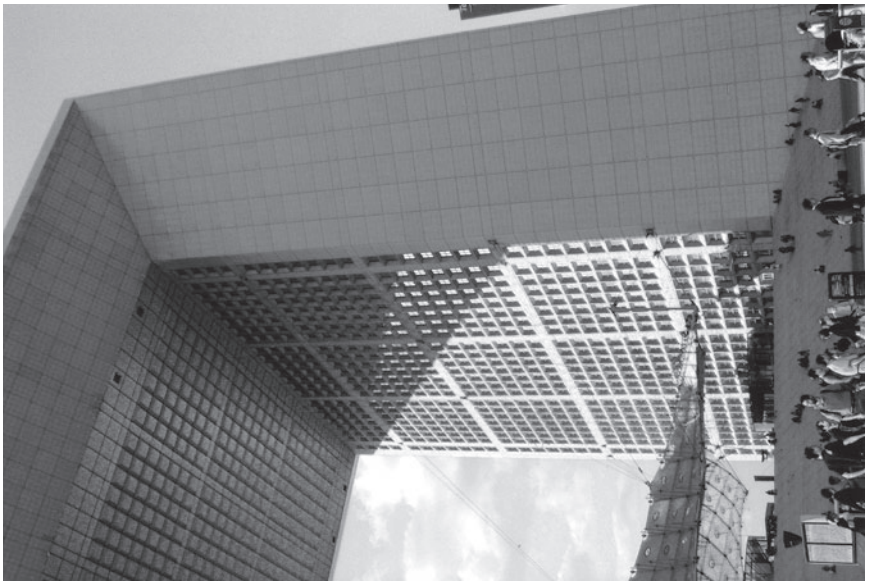
318. Rectangular openings in the top of a rectangular steeple. Luzern, Switzerland.



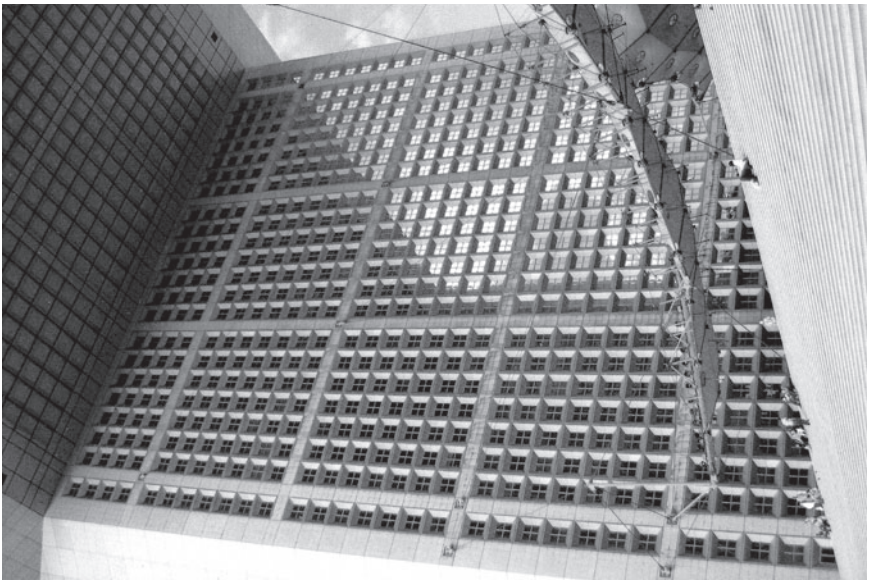
319. Rectangular clock centered between the two sides of a rectangular tower. Notice the repetition and symmetry. Volos, Greece.



320-322. Rectangular building with rectangular features. Arch de la Défense. Paris, France.

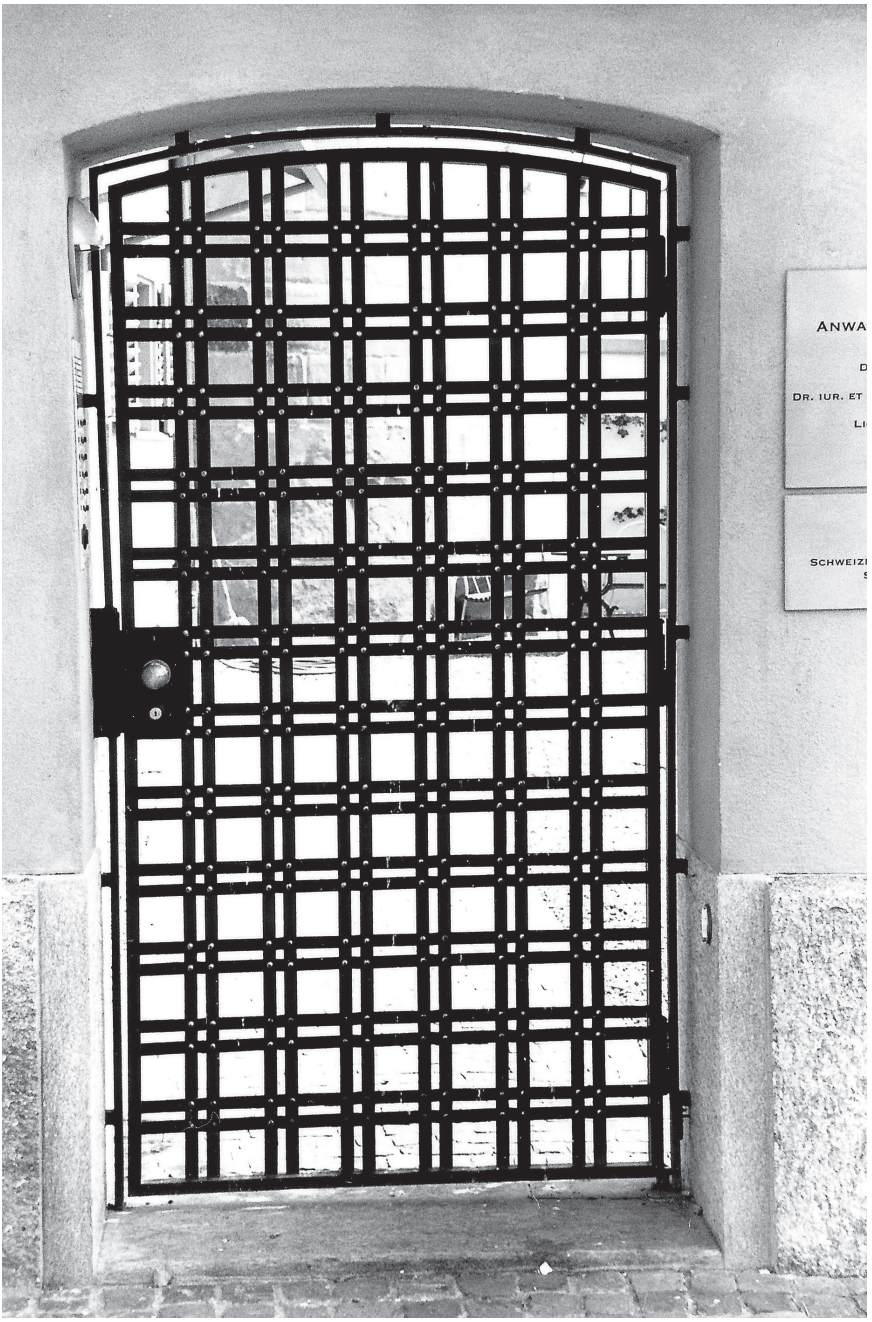


321-322.





323. Rectangular windows are arranged in horizontal and vertical rows and equidistant from each other. Arcelor Building. Paris, France.



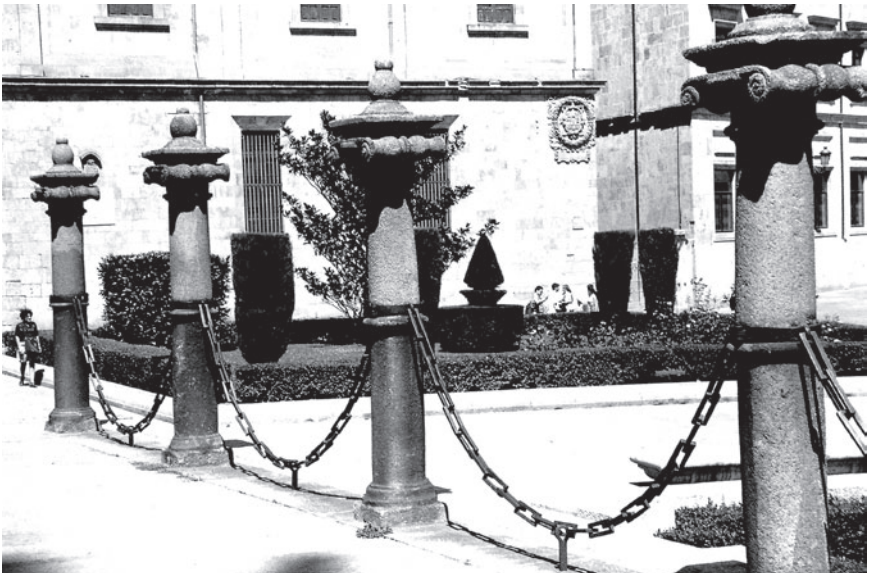
324. Rectangular design of a metal door in an entrance. Luzern, Switzerland.



325. Rectangular design in a wall around a home. Notice the use of repetition. England.



326. Rectangular design of a fence on the top of a building. Notice the use of repetition and parallel and perpendicular. Torremolinos, Spain.





327-328.
Rectangular links in a chain. Salamanca, Spain.



329. Rectangular basin. Milies, Greece.



330. Checkerboard pattern on a street. Paris, France.



331. Rectangular design on a plaza. Salamanca, Spain.



332. Rectangular pattern on a plaza next to a building. Notice the use of repetition. Luzern, Switzerland.



333. Rectangular design on a plaza. Notice the parallel and perpendicular arrangement. Athens, Greece.



334. Checkerboard pattern on a pedestrian crosswalk in a street. Luzern, Switzerland.



335. (left) Rectangular tree guards and sidewalk bricks. Notice the circular posts at the edge of the street and the use of repetition. Athens, Greece.



336. (right) Rectangles marking the separation of lanes for vehicles. Notice the circles in the foreground marking a pedestrian crosswalk. Moscow, Russia. L.W.



337. Manhole cover with rectangular designs. Athens, Greece.



338. Rectangular designs on a metal street cover. Rome, Italy.



339. Checkerboard design on a police car. Salamanca, Spain.



340. Checkerboard design on the top of a truck. Europe. H.S.

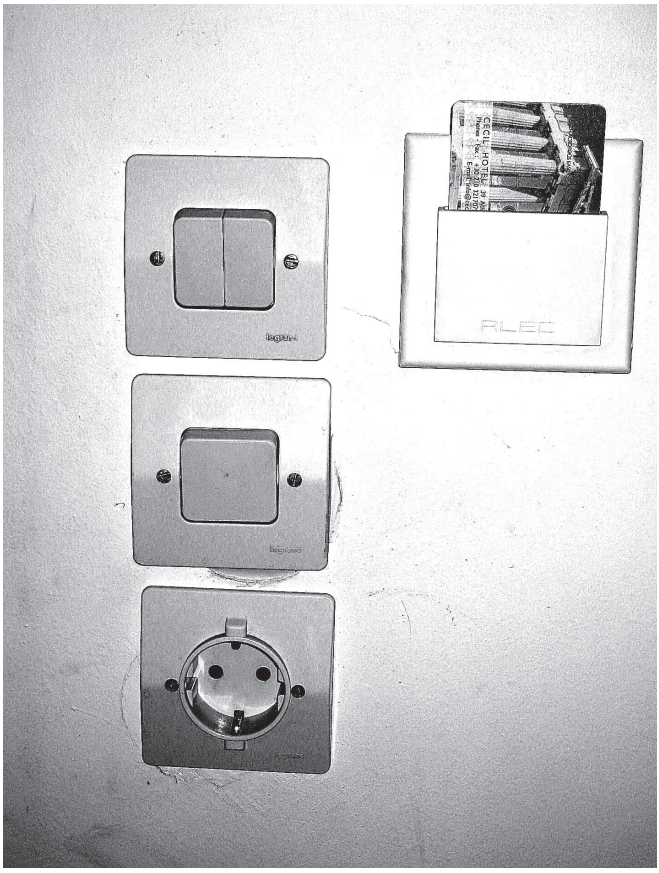




341. (above) Rectangular design on the "apron" worn by the driver of a double-decker horse drawn tram. London Transport Museum.

342. (right) Rectangular pattern on a hiker. Logo on the outside of a store. Paris, France.





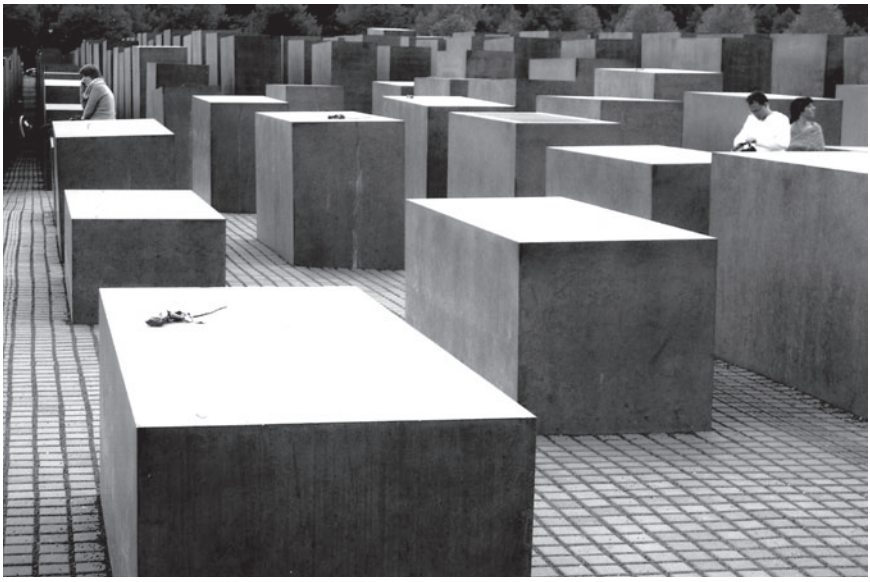
343. (above) Circular and checkerboard designs on cookies in a bakery.
Piraeus, Greece.

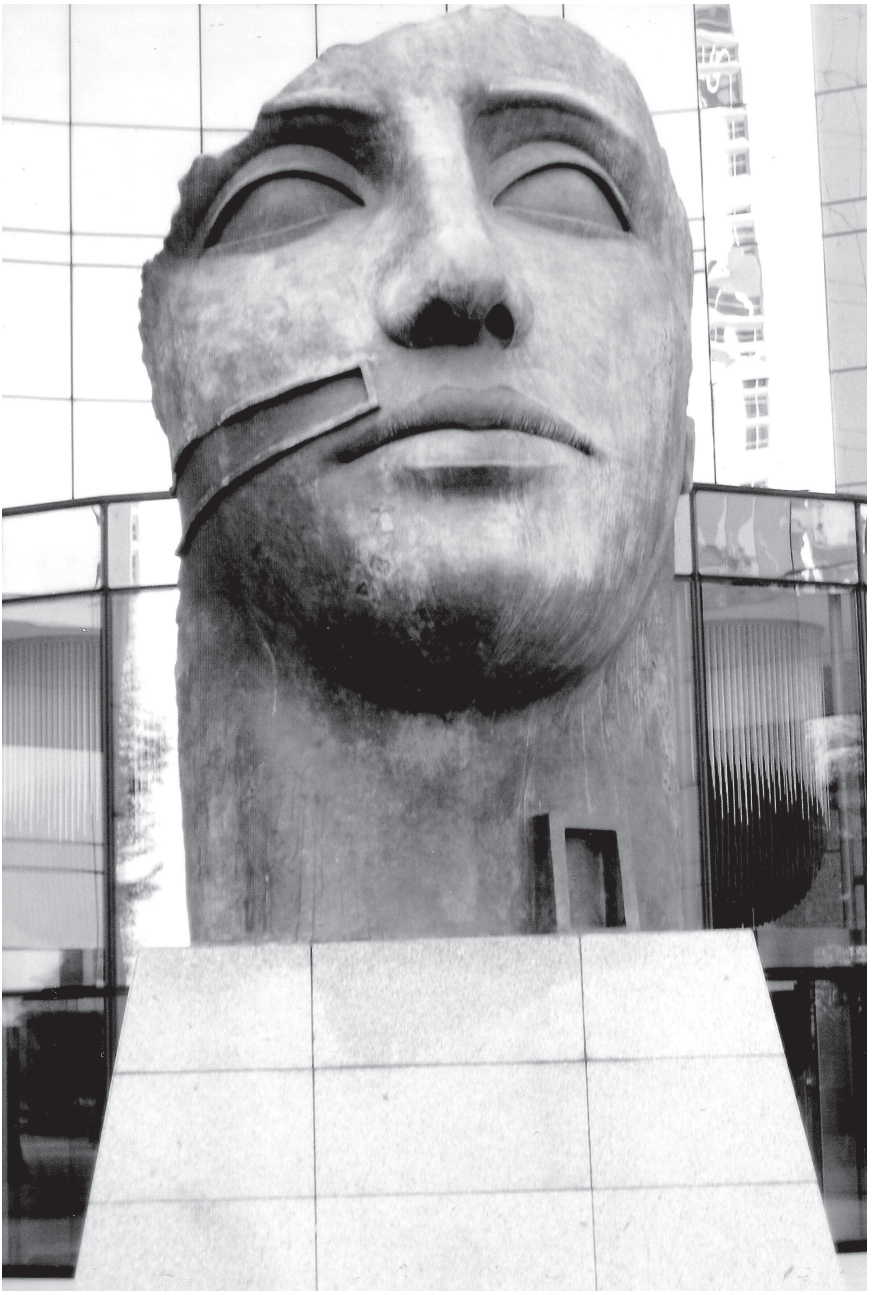
344. (left) Rectangular electrical switches, electrical socket, and information holder in a hotel room.
Athens, Greece.

345. Rectangular design of a tennis court. Heraklion, Crete.



346-347. Memorial for the Murdered Jews of Europe. Berlin, Germany. H.S.





348. Sculpture of a human head with “rectangles.” La Défense, Paris, France.

2.3. South Asia



349. Rectangular signs, windows, doors, sections in windows, and panels in doors. Kathmandu, Nepal. H.S.



350. Shadow puppet with rectangular design on "clothing." Andhra Pradesh, South India. Museum of Anthropology, Vancouver, British Columbia.

2.4. Southeast Asia



351-352. Rectangular doorways and windows. Angkor Wat, Cambodia. E.T.

352.





353-354. Rectangular doors. Angkor Wat, Cambodia. E.T.



355. Rectangular window and frames surrounding the window. Notice the symmetrical design beneath the window. Angkor Wat, Cambodia. E.T.



356-357. Repeated rectangular openings in a wall. Angkor Wat, Cambodia. E.T.





358.
Rectangular houses with gable roofs. Notice the horizontal and vertical construction of the house walls. Mekong River. M.D.



359-361. Factory that produces rectangular construction blocks. Vietnam. E.T.





361.



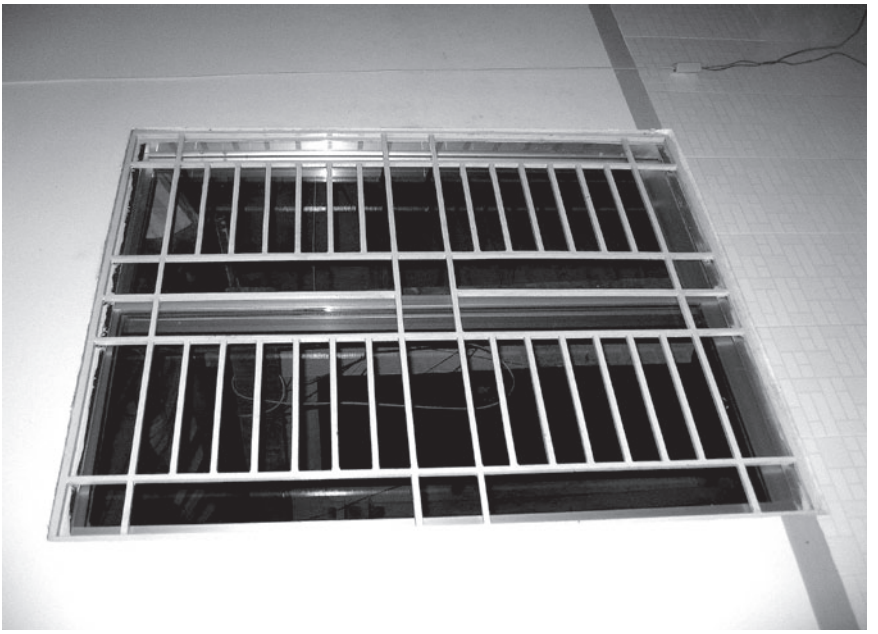
362. Rectangular features of a building under construction. Can Tho, Vietnam.

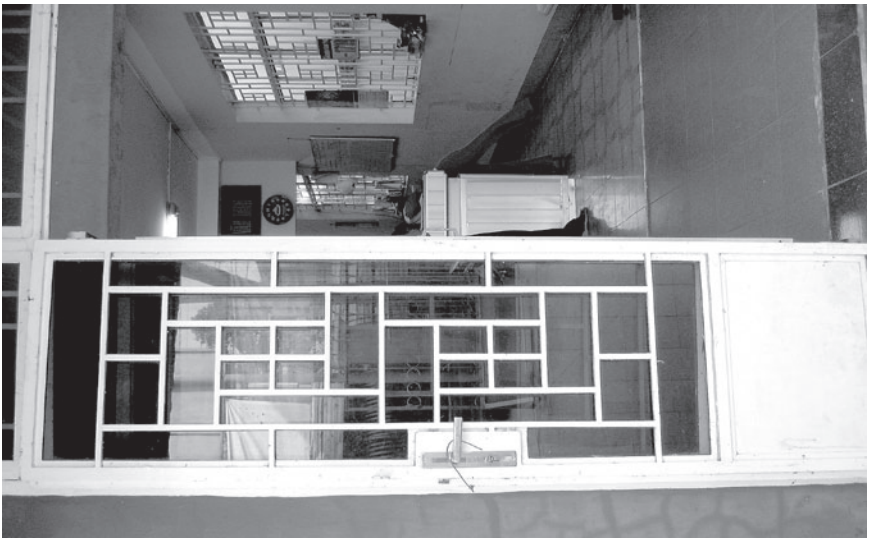


363. Rectangular windows, doors, spaces on the porch rail, and porch support on the left side. Notice that these openings are horizontal, vertical, and equidistant. Vietnam.



364. Horizontal and vertical rectangles on the outside wall of a home. Chuong Thien Province, Vietnam. H.H.





365-366. Horizontal and vertical rectangles in the design of metal frames for a house door and window. The metal frames are used to prevent theft. Vietnam.



367. Checkerboard design on the floor in the living room of a home. Notice the rectangular pictures on the walls. Can Tho, Vietnam. H.H.



368. Rectangular container for holding water in the yard of a home. Thot Not, Vietnam.



369. Rectangular enclosure for pigs. Thot Not, Vietnam. H.H.



370-371. Rectangular pens for raising fish. Vietnam.





372.
Using one's home for cutting squares (of sticky rice and mung beans) and wrapping them in cellophane for sale in local towns. Long Xuyen Province, Vietnam. H.H.

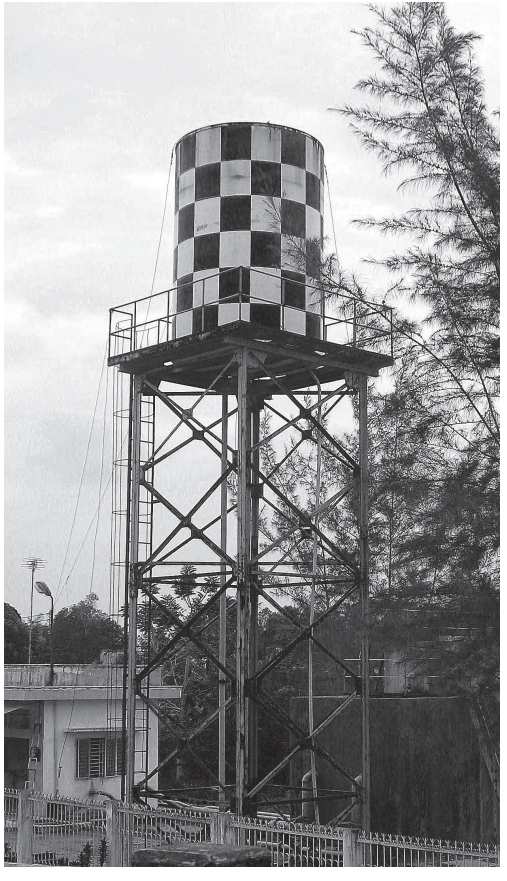
373-374. Rectangular Buddhist shrines in the yards of homes. Vietnam.



375. Rectangular designs in a family shrine that honors a deceased husband. Notice the use of centering, symmetry, and repetition. Vietnam.



376. (left)
Rectangular design of a building. Vietnam.



377. (right)
Checkerboard design on a water tower. Vietnam.

378.
Use of rectangles in the design of a building. Vietnam.



379. Use of rectangles and repetition in the design of a building. Vietnam.



380. Checkerboard design on an umbrella held by a woman with a child. Vietnam. E.T.



381. Rectangular designs on bags for sale in a store. Notice the circular hats. Thot Not, Vietnam.

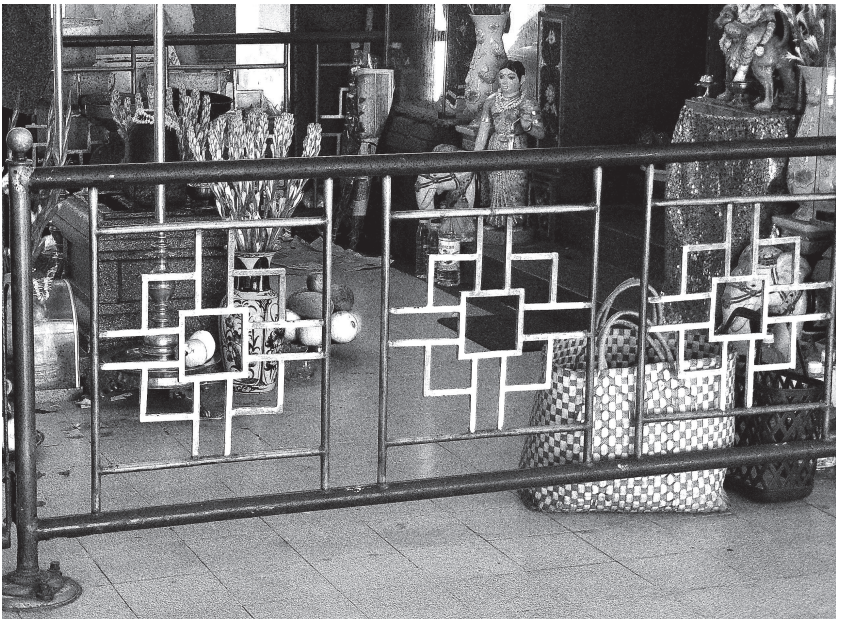
382. Checkerboard pattern on the cabin of a boat. Vietnam.



383. Rectangular tables in a restaurant. Notice the use of repetition and that the tables are parallel and perpendicular with the walls. Vietnam.



384. Rectangular table for playing pool. Notice the symmetrical design on the end of the pool table. Vietnam. A.H.



385. Repeated rectangular designs on a fence. Shri Mariammann Hindu Temple. Ho Chi Minh City, Vietnam.

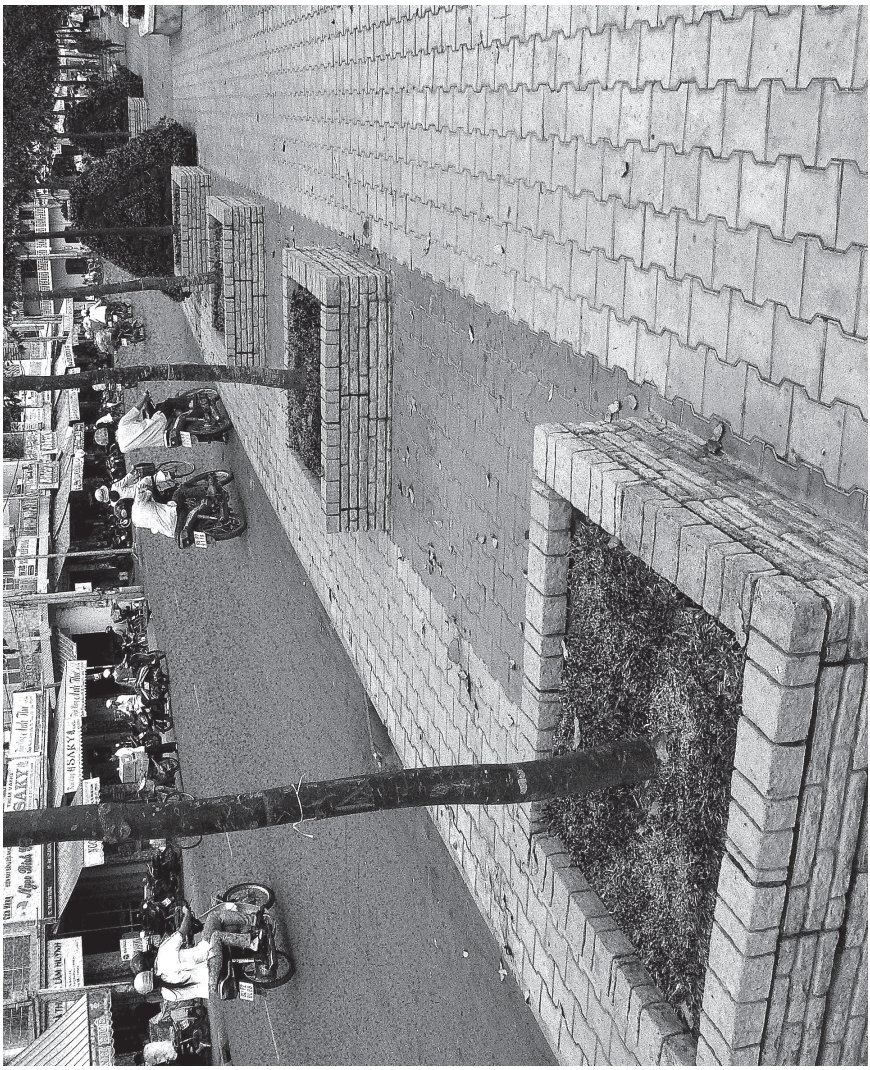


386. Repeated rectangular designs on the fence and entrance of a military graveyard. Southern Vietnam.



387-388. Repeated rectangular topiary along street dividers. Vietnam.





389.
Rectangular tree guards. Vietnam.



390. Truck with rectangular blocks of ice and rectangular door panels. Notice the repetitive design on the shirt worn by the male on the left. Vietnam. E.T.



391. Transporting rectangular objects. Vietnam. E.T.





392-393.
(above and left)
Rectangular opening
to a Vietcong tunnel.
Cu Chi, Vietnam. H.H.





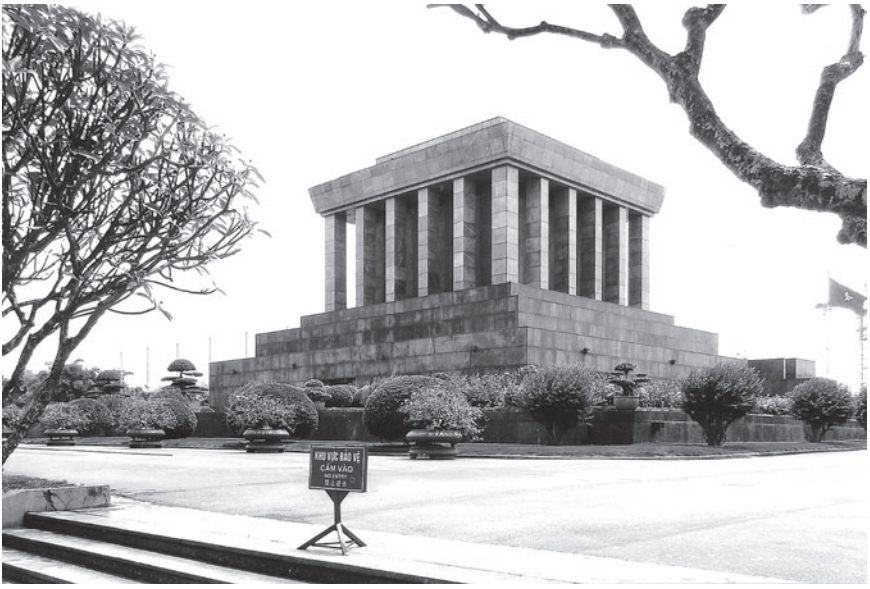


394-396.
Rectangular grave behind a home. Notice the rectangular metal grid used in connection with filling the grave with cement. Vietnam.

397-398.
Rectangular grave and coffin. Notice that the coffin is centered and placed parallel and perpendicular to the sides of the grave.
Vietnam. H.H.



399. Rectangular graves in a military cemetery. Notice the use of repetition, and the centering of names and stars on the graves. South Vietnam.



400-401. Rectangular design of the tomb of Ho-Chi Minh. Hanoi, Vietnam. E.T.





402. Rectangular structure of the chapel at a war memorial. Notice that the design on the chapel is centered. American War Cemetery, Manila, the Philippines. H.S.

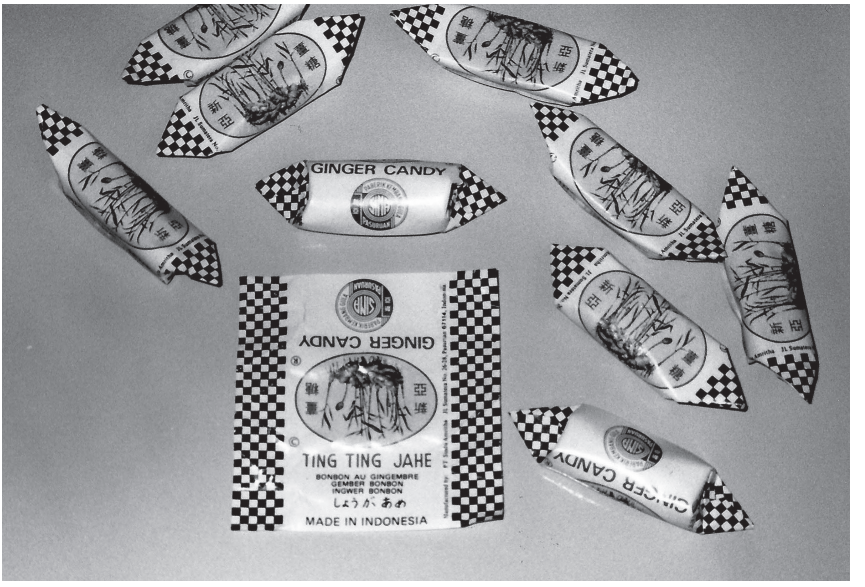


403-404. Store with rectangular fake money for sale. Vietnam. E.T.





405. Checkerboard pattern on a shirt. Thailand. H.S.

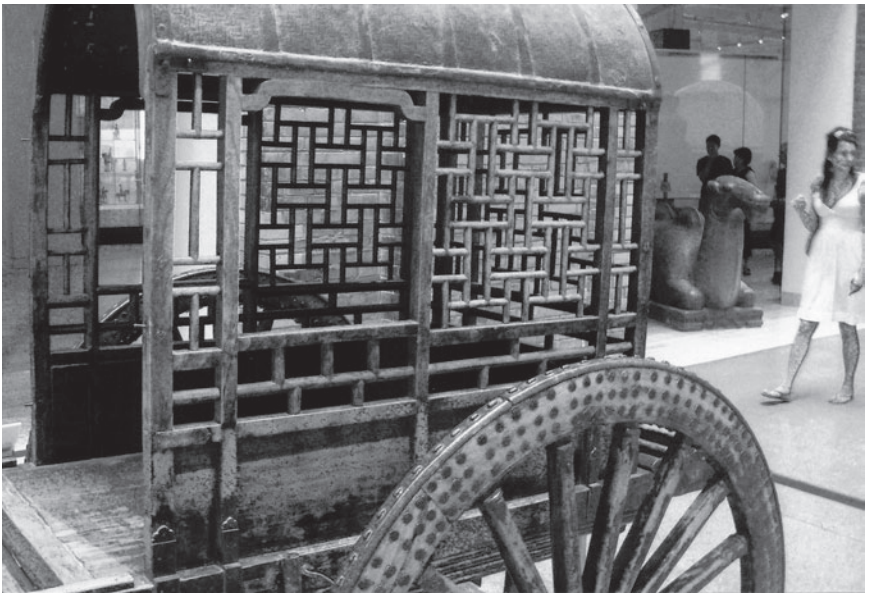


406. Candy imported from Indonesia in rectangular wrappers with a checkerboard design.

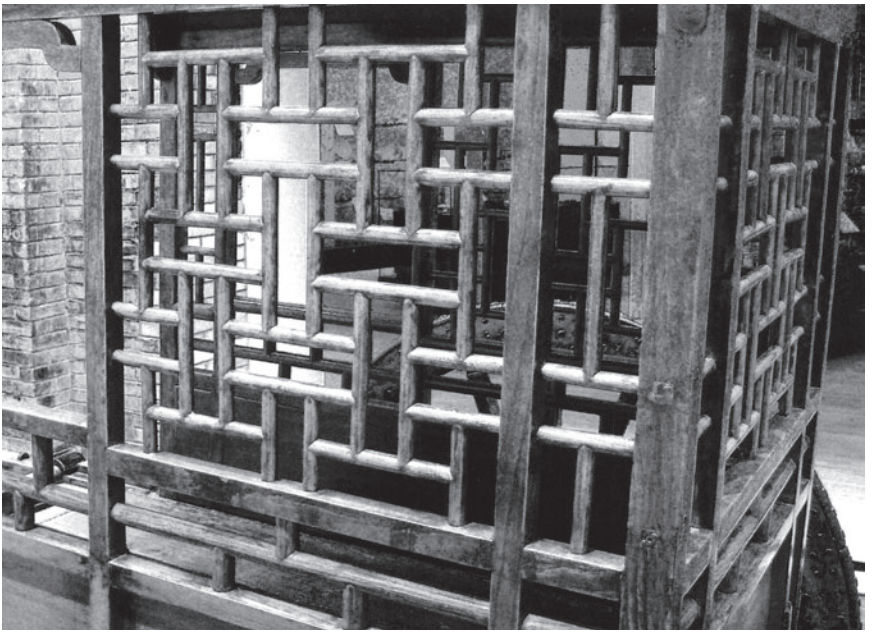


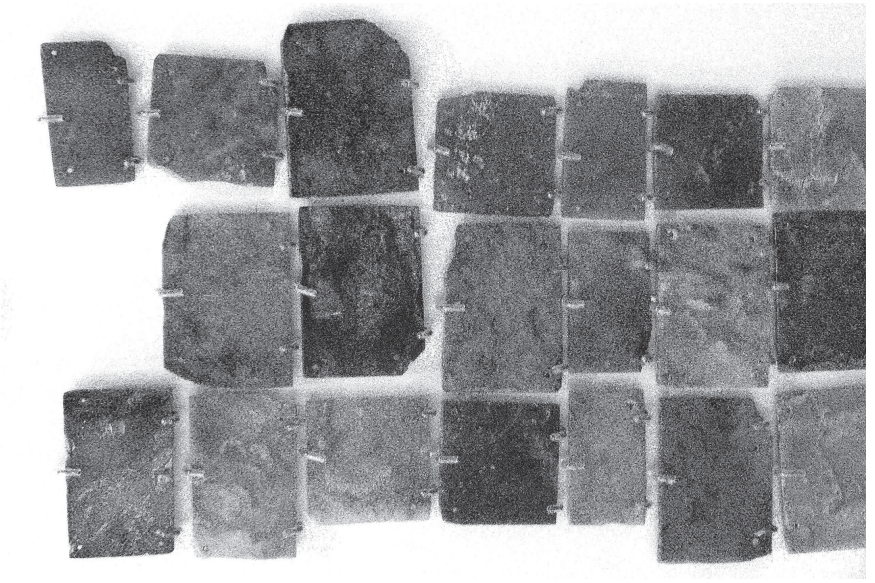
407. Rectangular bed, pillows, bedspread, bed runner, side tables, and picture frame. Notice the symmetrical presentation. Hotel room, Bangkok, Thailand. H.S.

2.5. East Asia



408-409. Carriage with rectangular designs on the side and rear walls. Notice that the rectangles are arranged horizontally and vertically. 19th century AD, China. Royal Ontario Museum, Toronto.







410. (above) Suit of rectangular pieces of jade that is placed over a dead body with the intention of preventing decay. Han Dynasty, China. Royal Ontario Museum, Toronto.

411. (left) Rectangular design of a walkway. Notice the repetitive arrangement of the rectangles. Kyoto, Japan. E.T.



412-413. Rectangular signs, steps, boards, tables, and seats. Sankeien Garden, Yokohama, Japan. H.S.

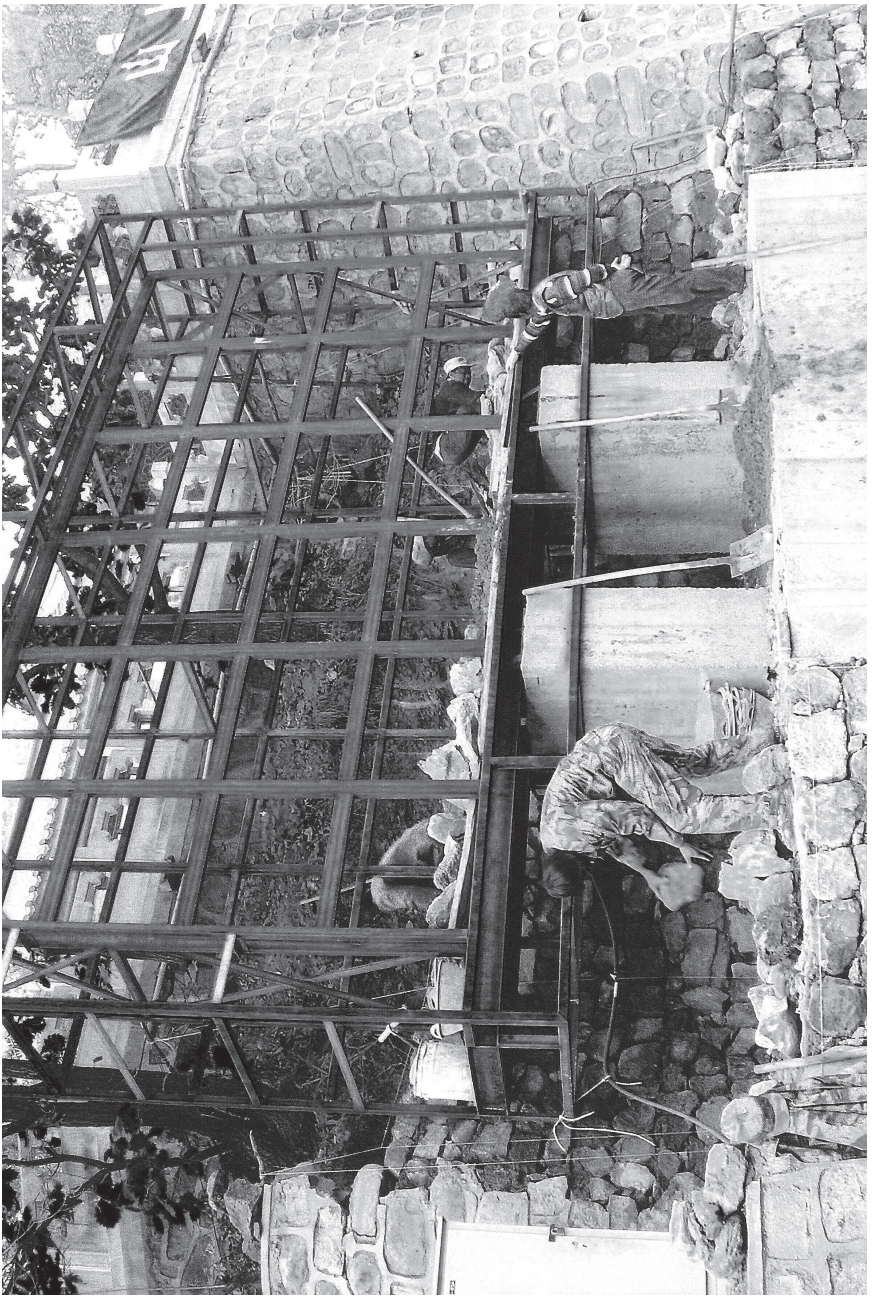




414. Rectangular notices and tables. Sankeien Garden,Yokohama, Japan. H.S.



415. Rectangular container. Sankeien Garden, Yokohama, Japan, H.S.



416. Rectangular construction framework. China. H.S.



417. Rectangular designs on the ceiling. Todaiji Temple, Nara, Japan. E.T.



418. Rectangular design of floor mats, screens, cushion, and art frames. Kyoto, Japan. E.T.



419-420. Rectangular constructions and features. Tokyo, Japan. E.T.





421-422. Rectangular horizontal and vertical advertising signs. Japan. E.T.





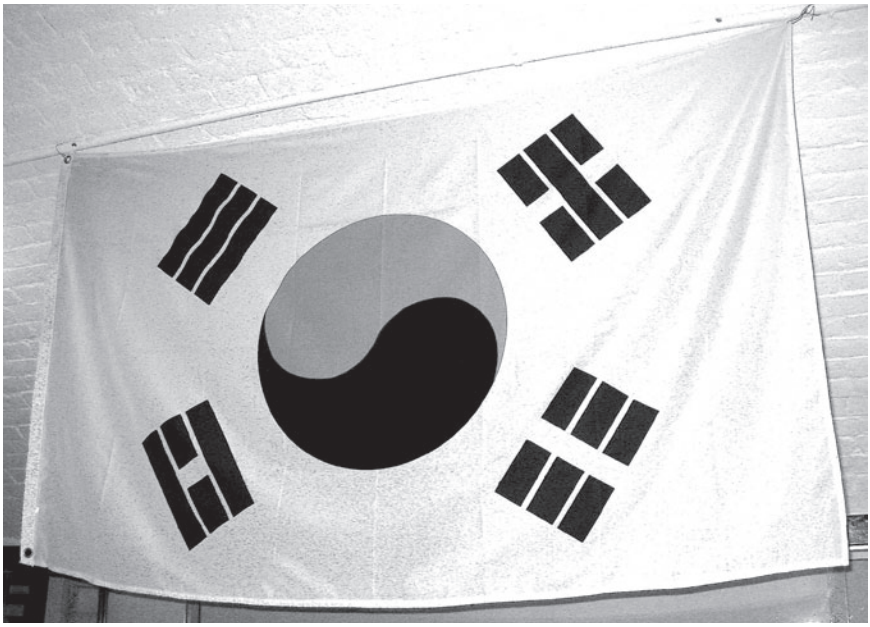
423.
Rectangular structure for a photography exhibit. Notice the rectangular photographs and frames. E.T.

424. Use of various rectangles. Okinawa Prefectural University of Arts. Okinawa. Y.F.



425-426. Rectangular constructions. Notice the use of repetition, equidistance, and horizontal and vertical. Okinawa. Y.F.





427. Rectangular trigrams in the design of the South Korean flag, which is rectangular in shape. Notice the centered circle.



428. Rectangular designs on a pillow imported from China. Notice that the designs are repeated and equidistant.



429.
Rectangular lamp and design on the lamp. Japan. Museum of Anthropology, Vancouver, British Columbia.



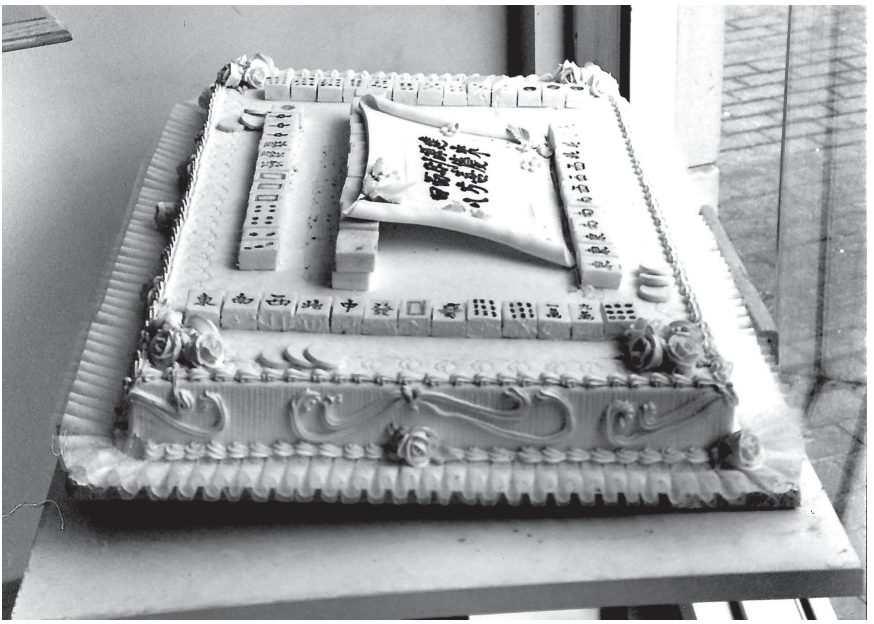
430. Checkerboard pattern on the dress of a tourist from Japan. Waikiki Beach, Hawaii.



431.
Repeated rectangular design on uniforms in a food shop.
Kyoto, Japan. E.T.



432. Rectangular design on melon pan. Japan. E.T.



433-434. Rectangular cake decorated with rectangles and symmetry. Bakery in Chinatown, Montreal, Quebec.





435.
Designs placed within rectangles on a toy. Japan. Museum of Anthropology, Vancouver.

436. Rectangular design of a game board for Go. Notice the circular pieces in circular bowls grouped together on the basis of similarity (black versus white). Victoria and Albert Museum, London.



437.
Shop with rectangular magazines and books. Japan. E.T.



438. Pictures in rectangular frames outside the Magistrate's Office. Goryōkaku Fort, Hakodate, Hokkaido, Japan. H.S.





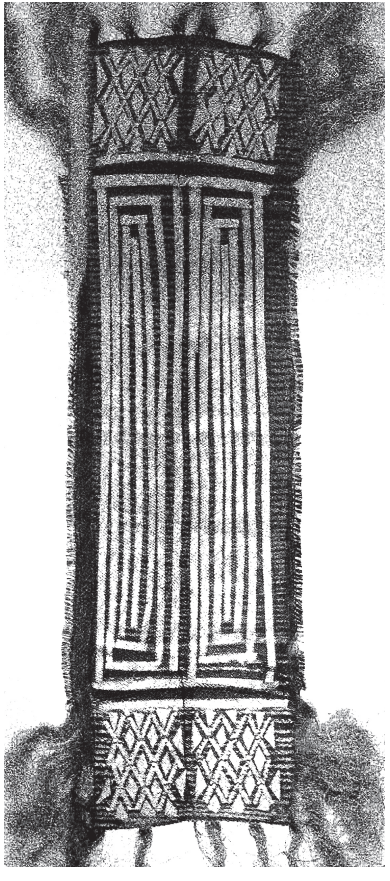
439-440.
Students sitting on rectangular mats and drawing on rectangular boards. Magistrate's Office, Goryōkaku Fort, Hakodate, Hokkaido, Japan. H.S.

2.6. Oceania

441-442. Rectangular garden plots. Men breaking ground and eating. Kilenge, West New Britain, Papua, New Guinea. M.Z.



442.



443. (left) Rectangular design. Vanuatu, the Pacific. The British Museum.

444. (right) Rectangular designs on a shirt. Notice that the rectangles are arranged so that they are centered and symmetrical. Ferry in New Zealand. H.S.



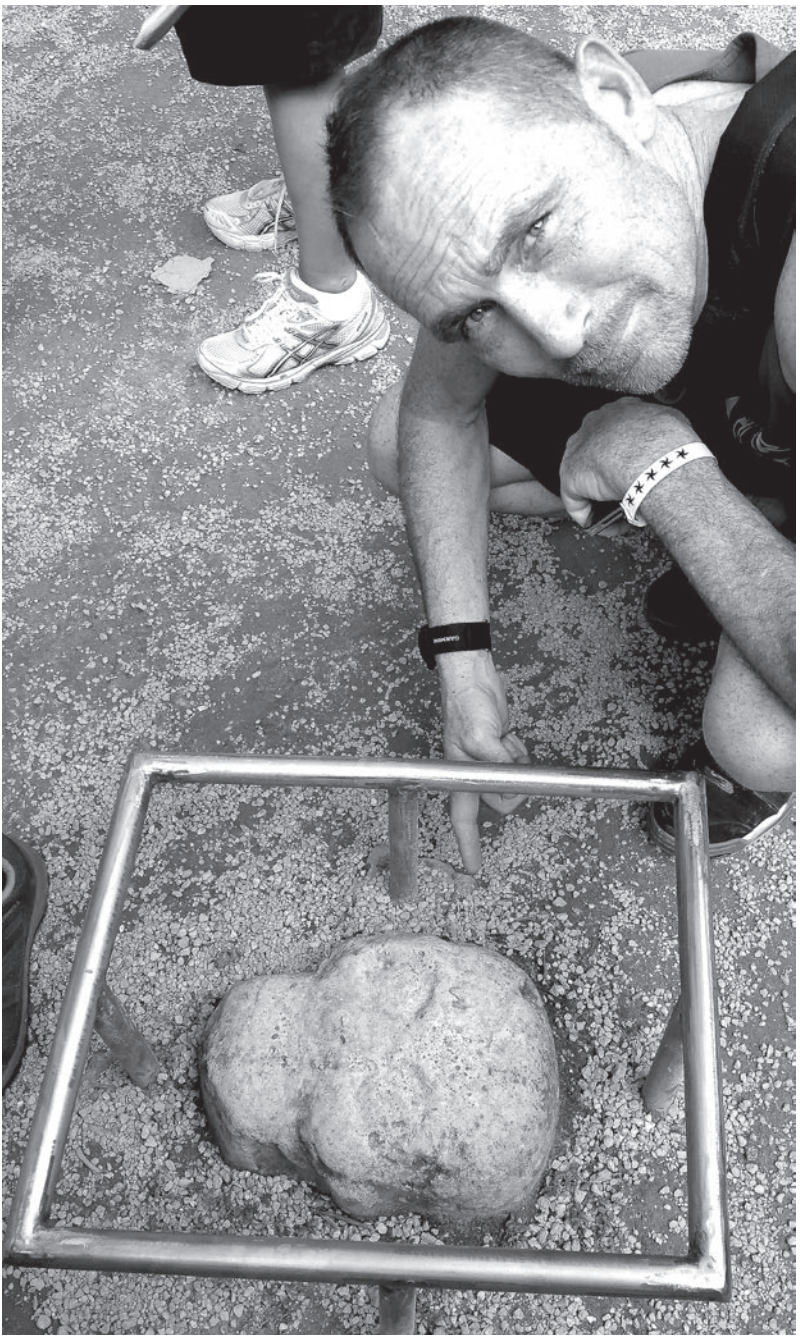
2.7. The Americas



445. Rectangular building and windows. Notice the use of symmetry. Temple of the Seven Dolls, Dzibilchaltun, Yucatan, Mexico. U.K.



446. Rectangular building and windows. Casa Colorada, Chichen Itza, Yucatan, Mexico. U.K.

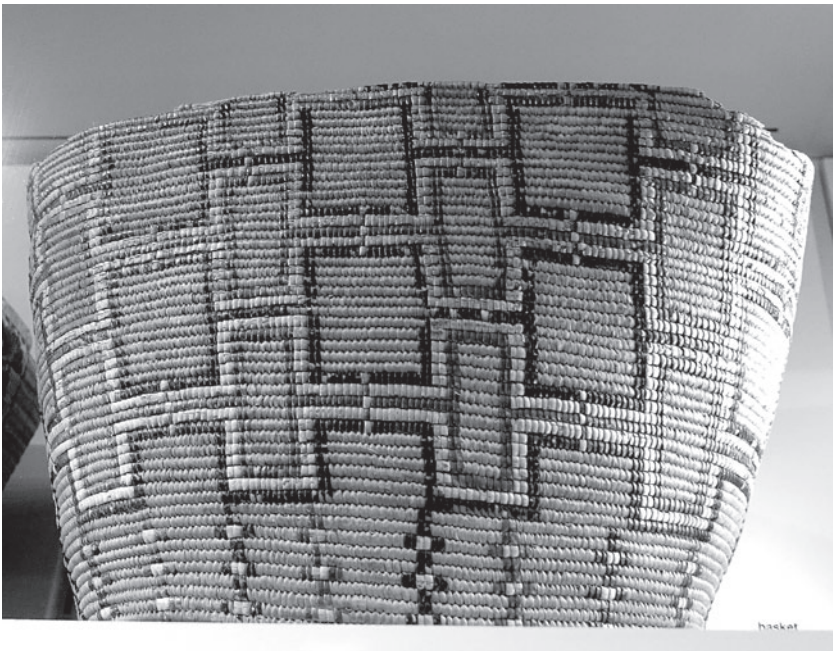


447. Sculpture protected by a rectangular frame. Cobá, Mexico. E.T.

448.
Rectangular designs on pants. Inuit. Museum of Anthropology, Vancouver.

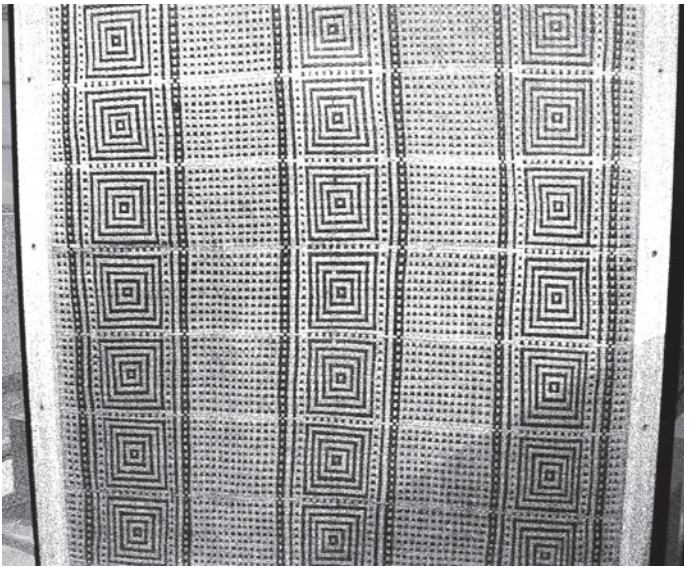


449. Rectangular, triangular, and diamond designs on Native North American clothing. Notice the symmetrical placement of designs and the use of repetition. Royal Ontario Museum, Toronto, Ontario.





450-451. Rectangular designs on First Nations baskets. British Columbia. Museum of Anthropology, Vancouver.





452. (above) Repeated rectangular designs on a mat. Notice that the rectangles are parallel and perpendicular with the sides of the mat. 20th century, Haida. Royal Ontario Museum, Toronto.

453. (left) Rectangular base for the Louisbourg Cross at Fortress Louisbourg in Nova Scotia, Canada. Notice the symmetrical design of the cross.





454-457.
Rectangular designs of furnishings at Fortress Louisbourg, an 18th century French fortress on Cape Breton Island, Nova Scotia.



456.



457.

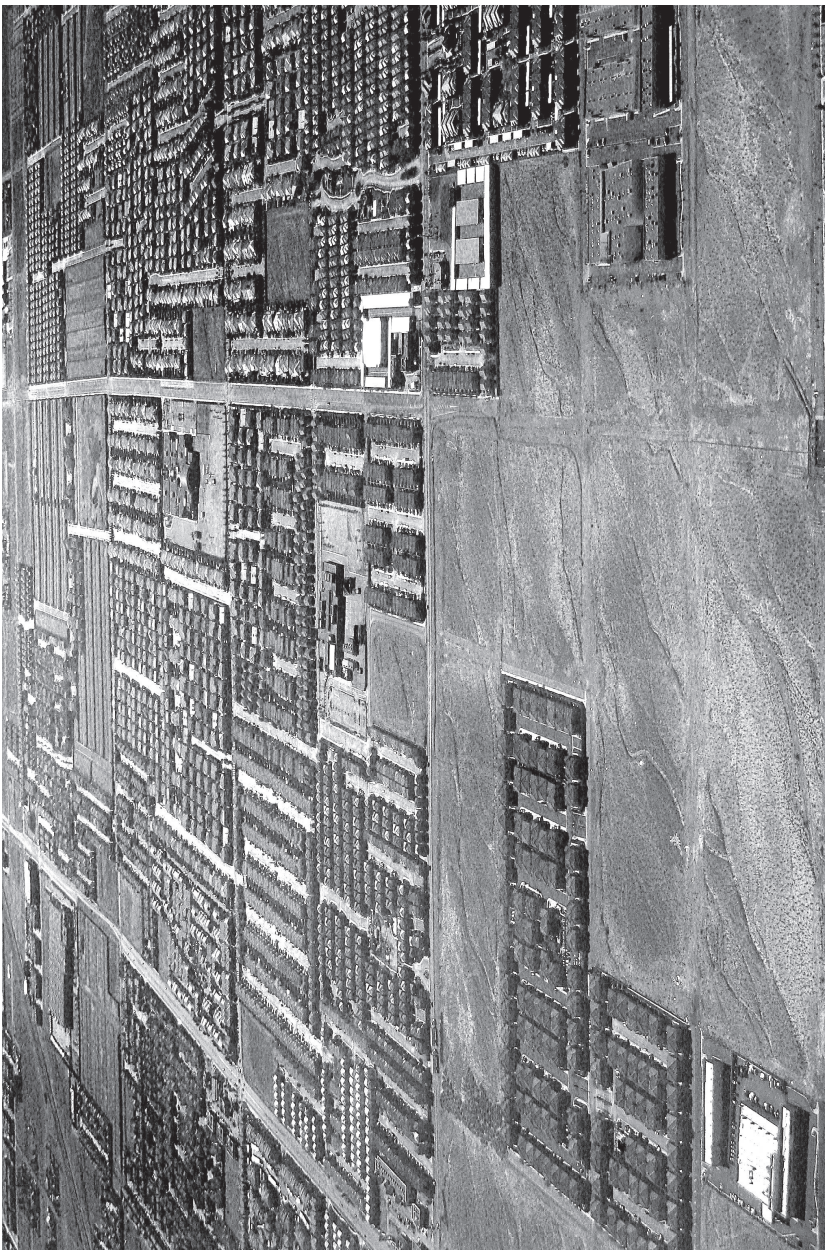


458. Rectangular design of the chess board inlaid in the table. Notice the symmetrical designs of the table, chairs, and pattern on the upholstery on the chairs. Fortress Louisbourg, Nova Scotia.



459-460. Rectangular farm plots. Prince Edward Island, Canada.





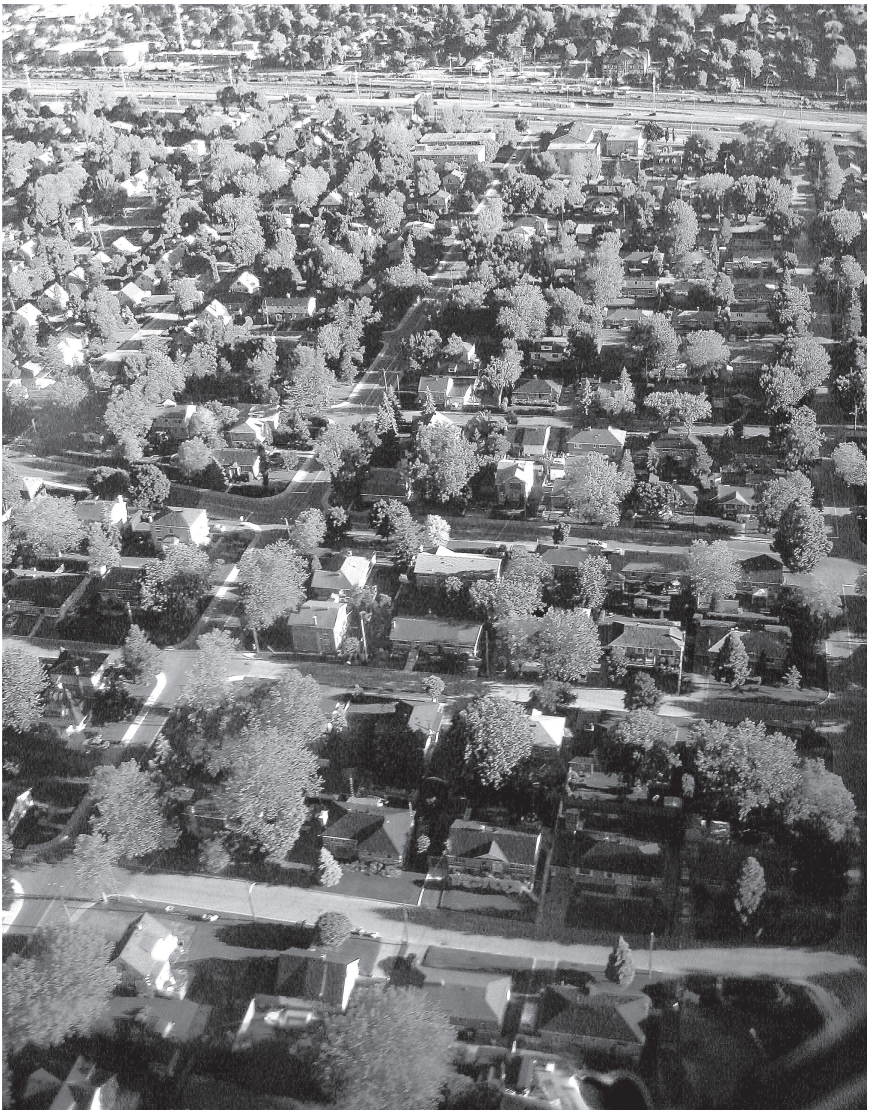
461. Rectangular houses and buildings. Canada.



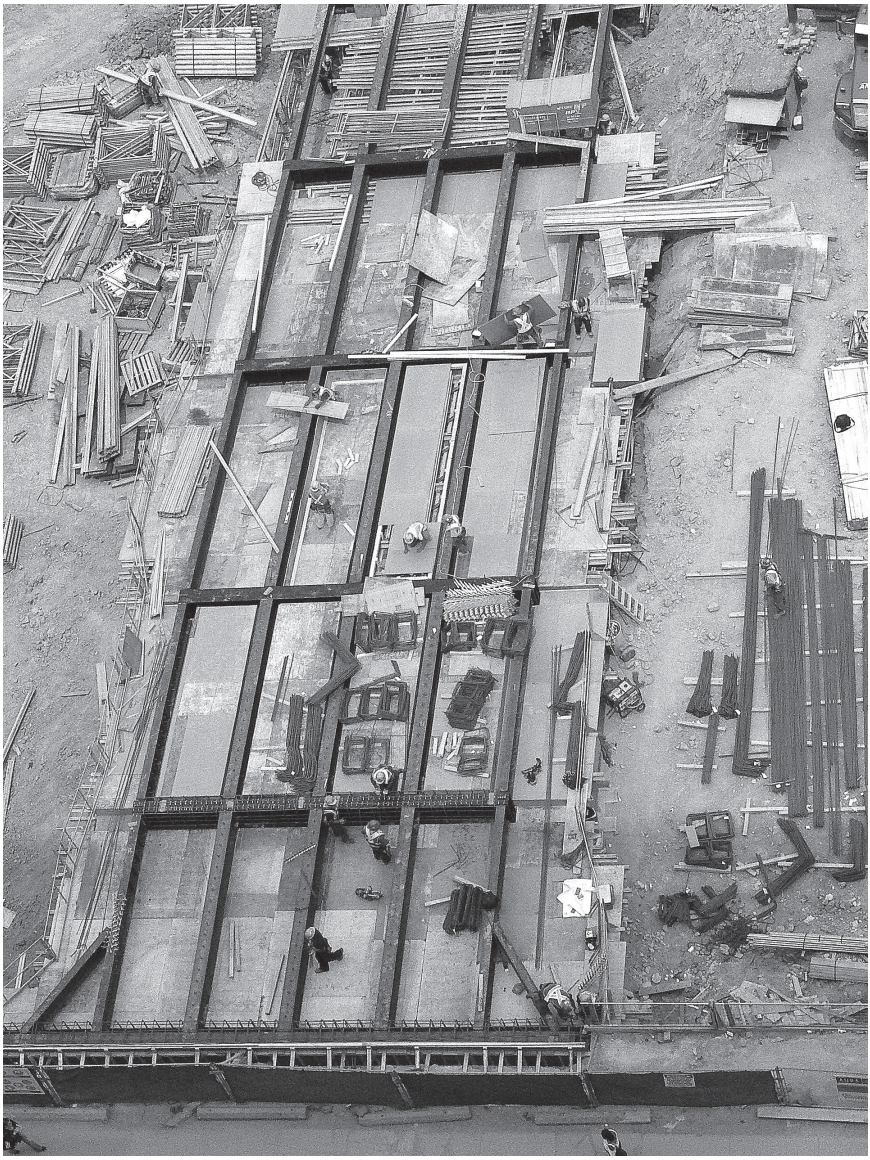
462-463. Rectangular buildings. Canada.



464. Rectangular containers. Canada.



465. Rectangular homes with gable and hip roofs. Canada.



466-468. Rectangular foundation and materials for a new building. Toronto, Ontario.



467.



468.



469. Rectangular framework of a hotel under construction. Charlottetown, PEI.



470. Use of rectangles and horizontal lines in the design of buildings. Toronto, Ontario.



471. Rectangular features on a building. Notice the use of repetition. Vancouver, British Columbia.



472. Rectangular designs on a building. Notice the repetition. Montreal, Quebec.



473. Rectangular building design, windows, and photographs at the lower left. Metropolis, Metrotown, Burnaby, British Columbia.



474. Rectangular windows in a building. Notice the use of repetition and equidistant placement. Montreal, Quebec.



475. Rectangular designs on a building. Notice the symmetry of the building. Moncton, New Brunswick.



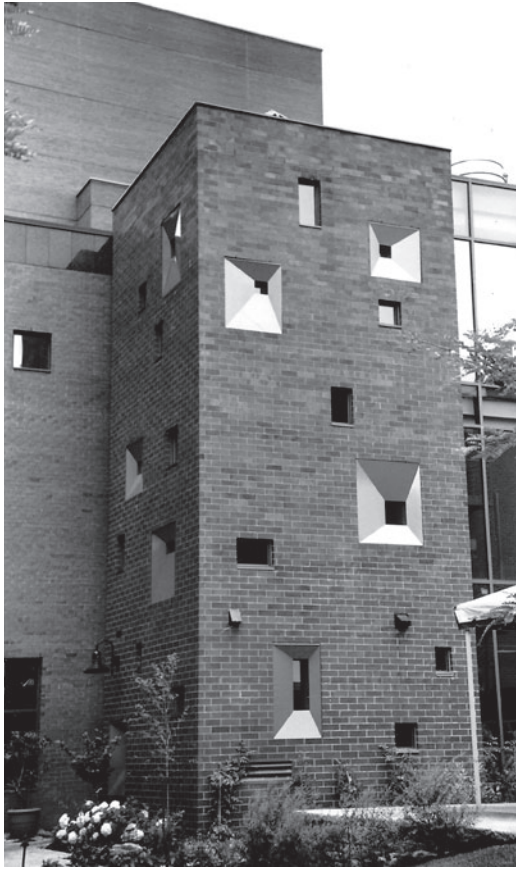
476. Rectangular building. Notice that the features on each wall are centered. Greater Toronto area, Ontario.



477. Rectangular designs in a university dormitory. Charlottetown, PEI.



478. (left) Rectangular building and features. Notice the lines and circles, and that the door and figure are centered, the design on the door is repetitive, and the façade of the building is symmetrical. Tiffany & Company, Toronto.



479. (right) Rectangular building and windows. Montreal, Quebec.



480. Rectangular designs on a high school building. Charlottetown, PEI.



481. Rectangles in the design of the outer wall of a gymnasium. PEI.



482-483. Rectangular windows, balconies, partitions, and doors in a residence building. Charlottetown, PEI.





484. Building with numerous rectangular windows. Canada.



485. Rectangular windows. Notice the symmetrical design of rectangles in the windows and the use of repetition. Charlottetown, PEI.



486. Rectangular window extensions. Notice the use of repetition and vertical lines. Charlottetown, PEI.



487. Rectangular frames around the windows of a building. Notice the rectangular windows in neighboring buildings. Canada.



488-489. Decorative rectangles. Vancouver, British Columbia.





490. Rectangular wall and glass units and rectangular skylights. Notice the use of repetition. Vancouver, British Columbia.



491. Rectangles and horizontal and vertical lines in the design of the entrance to a building. Toronto, Ontario.



492. (left)
Various rectangles and lines in a house. Notice the symmetrical arrangement surrounding the door. Charlottetown, PEI.

493. (below)
Rectangular designs on a building housing a gift shop. Burlington, PEI.







494-497.
Use of rectangles in the design of a public library. Notice that the rectangles and lights are repetitive, equidistant, and in horizontal rows. Vancouver, British Columbia.



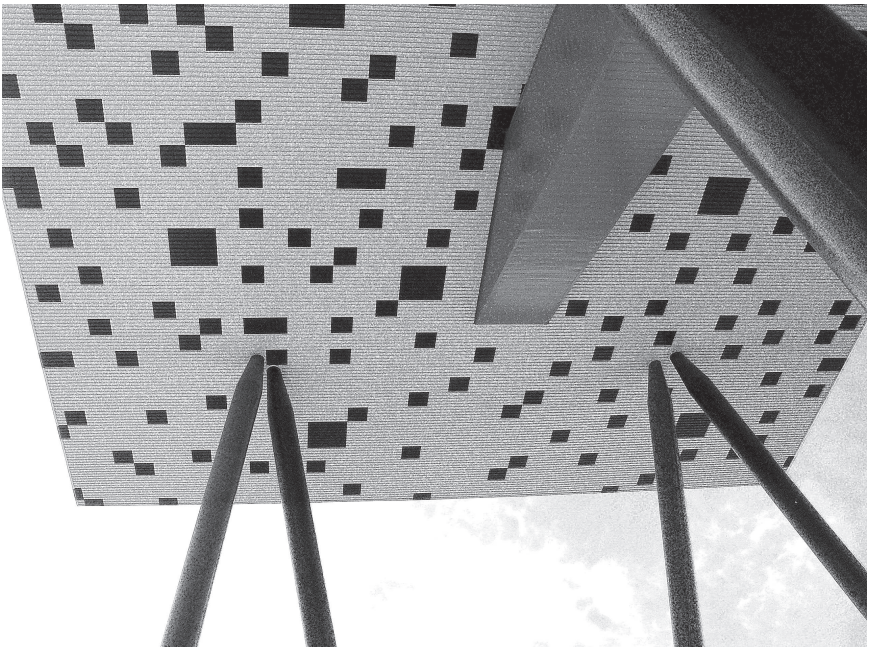
497.



496.



498-499. Rectangular design and decoration. Ontario College of Art. Toronto, Ontario.





500. (above) Use of rectangles on the first floor and vertical lines on the second floor in the design of a building. Charlottetown, PEI.



501. (left) Decorative façade of rectangles. Notice the use of repetition. Charlottetown, PEI.



502.

502-503.
Useless rectangular decorative shutters that would not protect windows. PEI. H.S.

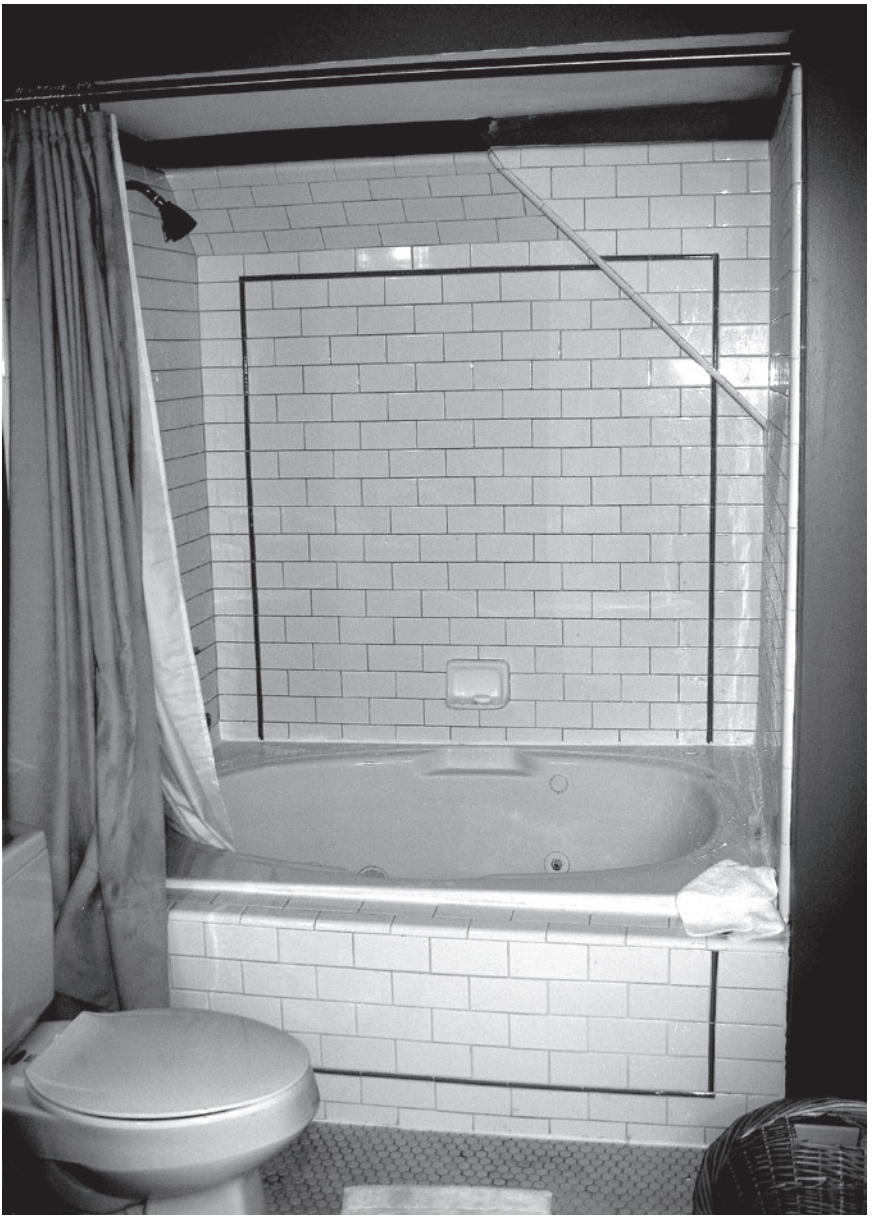


504-505.
Lines incised into concrete around the base of a building to give the impression that it was constructed with rectangular blocks. Charlottetown, PEI.

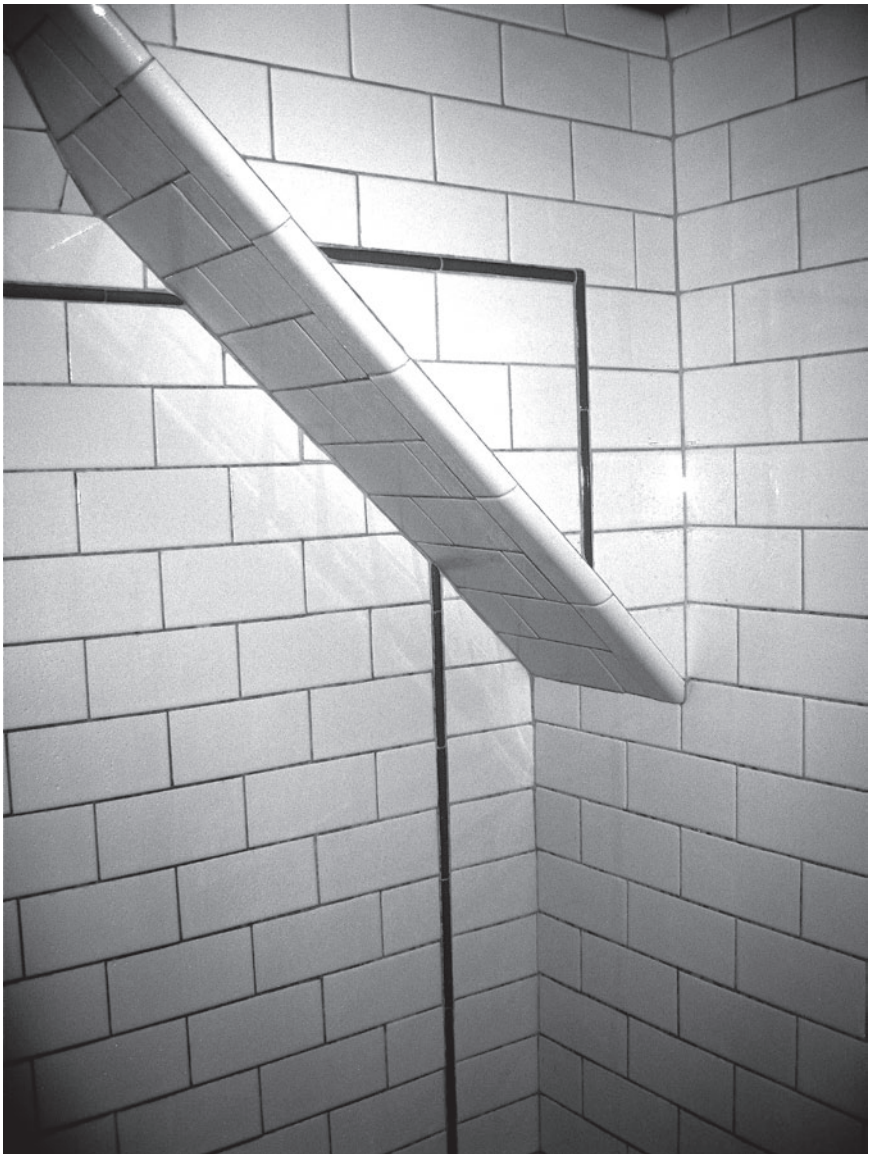




505.



506-508. Rectangular design in a bathroom. Notice that the design is continued despite the diagonal structure in the upper right and despite the separation between the wall and the outside of the bathtub. Detroit, Michigan.



507.



508.



509. Placement of decorative rectangular walls at both the front and the rear of sloping roofs on both sides of a store. Prince Edward Island. PEI Public Archives.



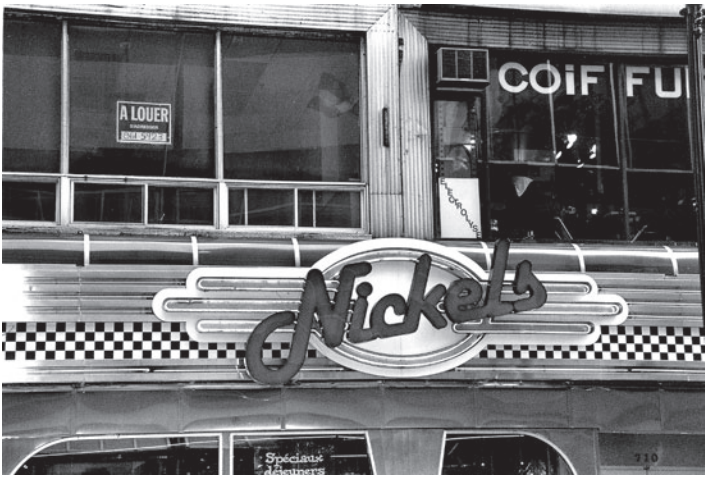
510. Rectangular units in a circular building. Notice the use of repetition. Vancouver, British Columbia.



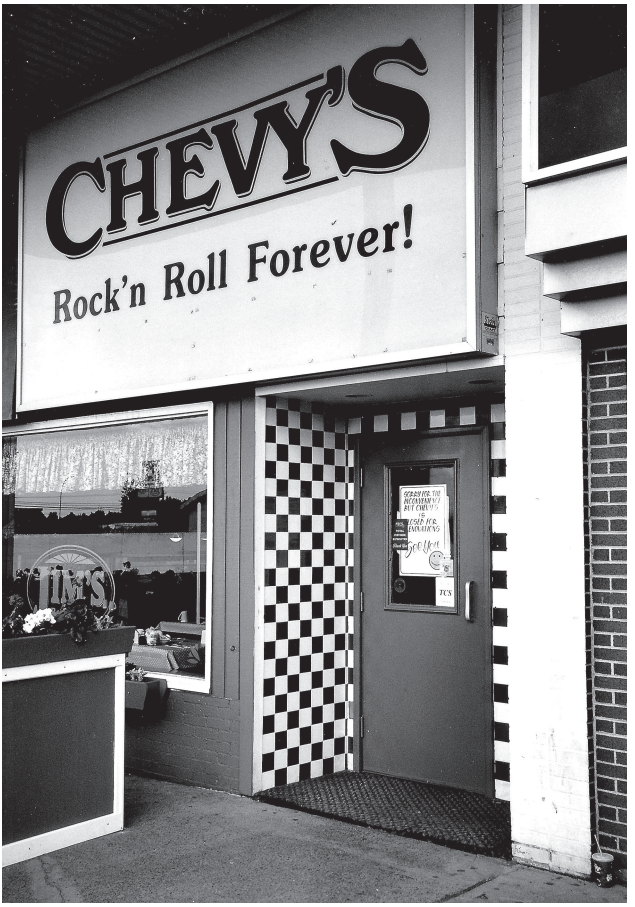
511. Checkerboard design on the outer wall. Army-Navy Store, Halifax, Nova Scotia.



512. Rectangular designs on the windows of a bookstore. Halifax, Nova Scotia.



513. (above) Checkerboard design on the exterior of a restaurant. Montreal, Quebec.



514. (left) Checkerboard design at the entrance to a nightclub. Charlottetown, PEI.



515. (left) Repeated decorative rectangles on a restaurant. Moncton, New Brunswick.



516. (right) Repeated rectangular design on the top of the AT&T Center. Los Angeles, California.

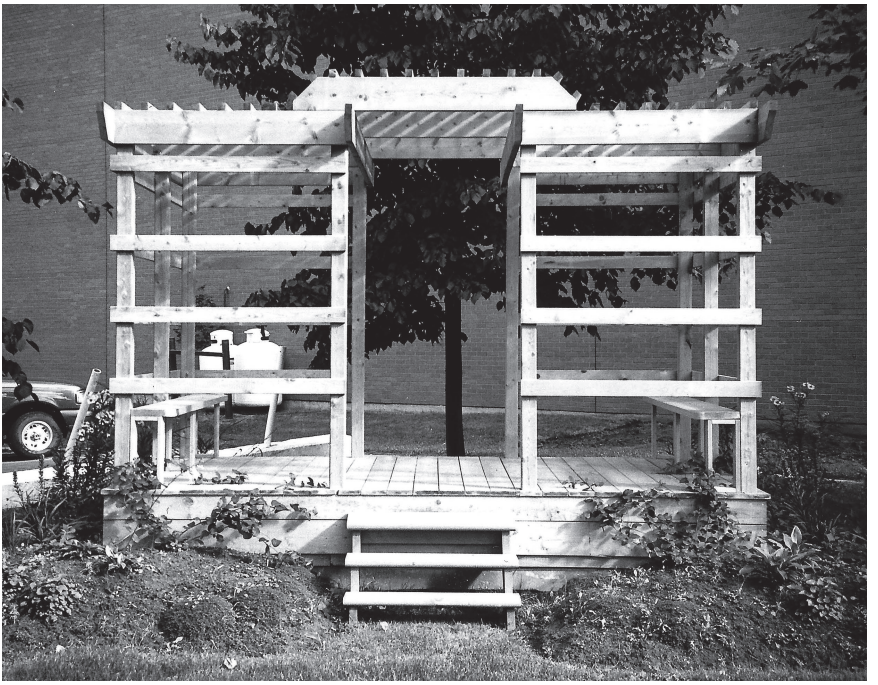


517. (left) Rectangular clocks, clock tower, and windows. Vancouver, British Columbia.

518. (right) Checkerboard design on the top of a water tower. As a result the tower is more easily seen by low flying aircraft. Summerside, PEI.



519. Checkerboard designs on structures at an airport. Montreal, Quebec.



520. Rectangular gazebo. Notice the use of symmetry. Charlottetown, PEI.



521. Rectangular designs in a fence. Walking in winter. Charlottetown, PEI.



522. Rail designed with rectangles and circles. Summerside, PEI.



523. Repeated rectangular design on a wall. Los Angeles, California.

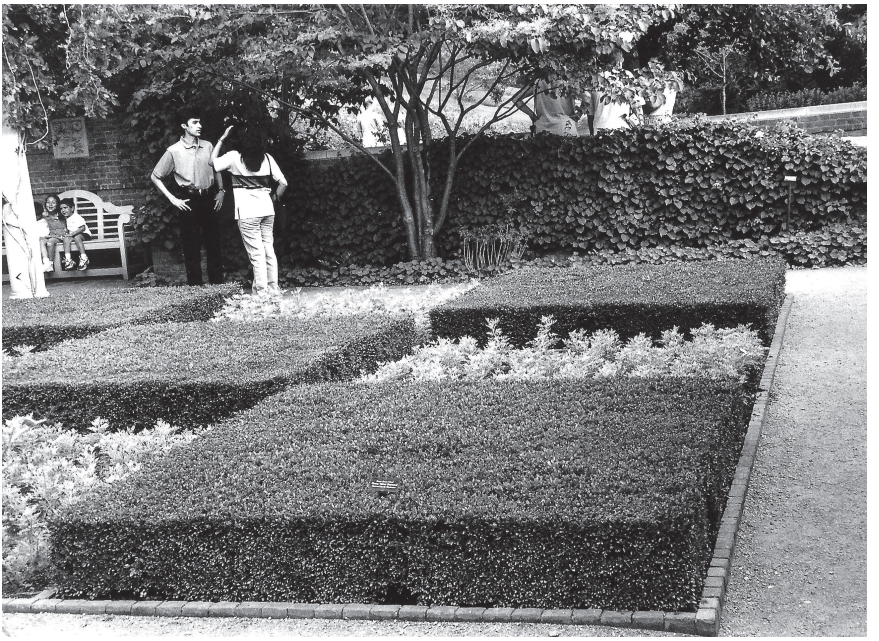
524.
Rectangular platform and picnic tables in a park. One can see Charlottetown on the other side of the harbor.
Rocky Point, PEI.



525. (left) Rectangular windows in a circular structure. Los Angeles, California.

526. (below) Rectangular windows and designs on walls. Notice that the designs are horizontal despite the fact that the land and sidewalk slope downhill. Los Angeles, California.



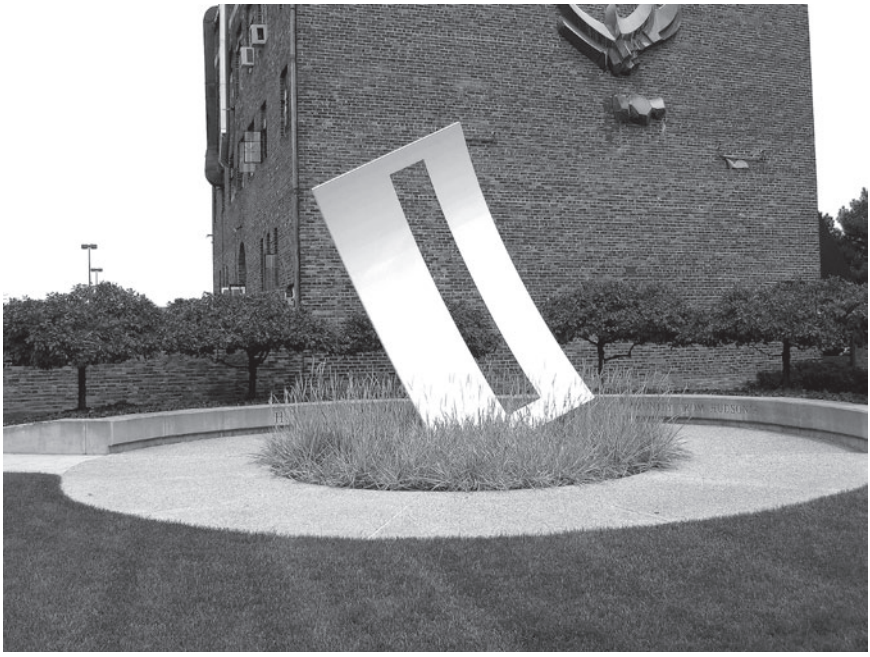


527-528. Checkerboard pattern. Notice the circular pool below. Chicago Botanic Garden. Glencoe, Illinois.





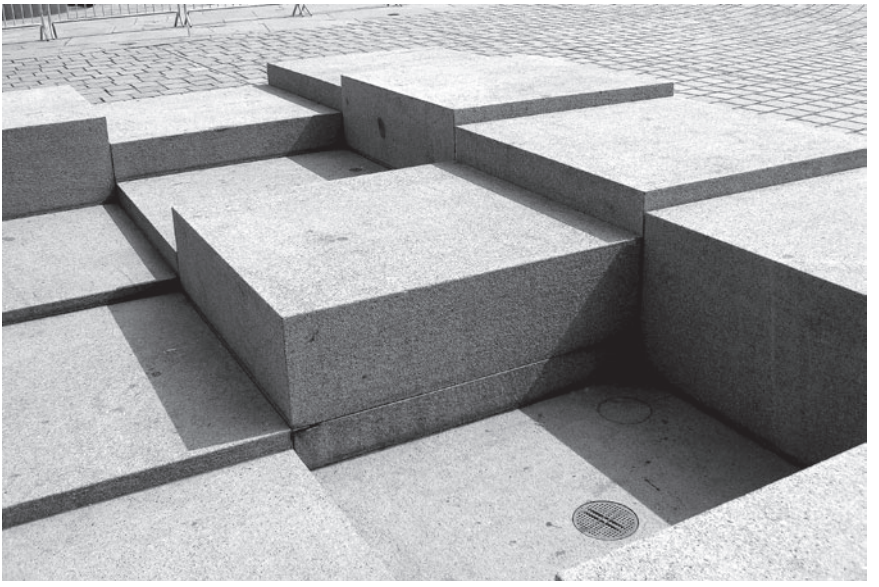
529. Repeated rectangular hedges. Los Angeles, California.



530. Rectangular sculpture. Detroit, Michigan.

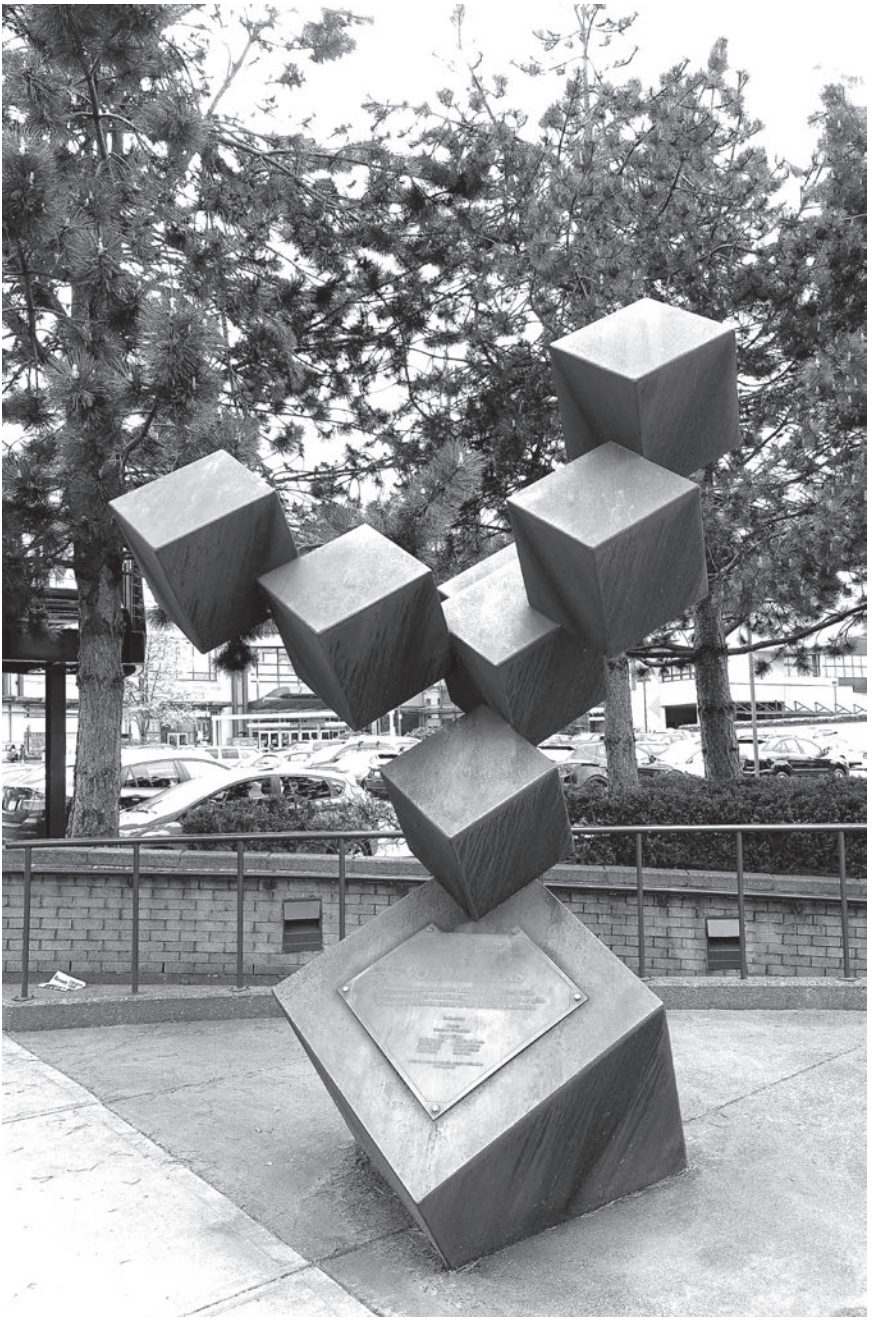


531-532. Rectangular sculpture. Hart Plaza. Detroit, Michigan.





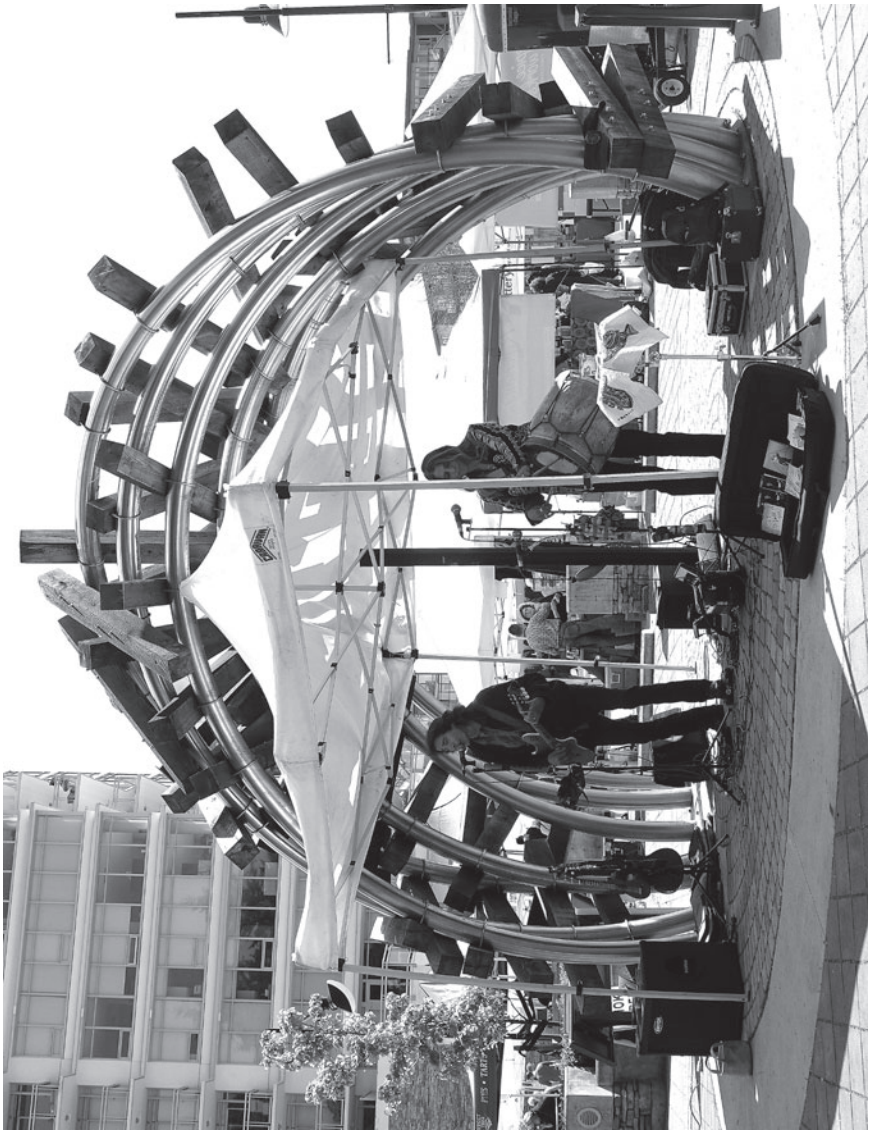
533. Rectangular sculpture. Shopping mall, Tsawwassen Mills, Tsawwassen, British Columbia.



534. Rectangular sculpture. Metropolis, Metrotown. Burnaby, British Columbia.

535-536. Collage of retangular doors, windows, and panels above the entrance to an art gallery. Charlotte-town, PEI.

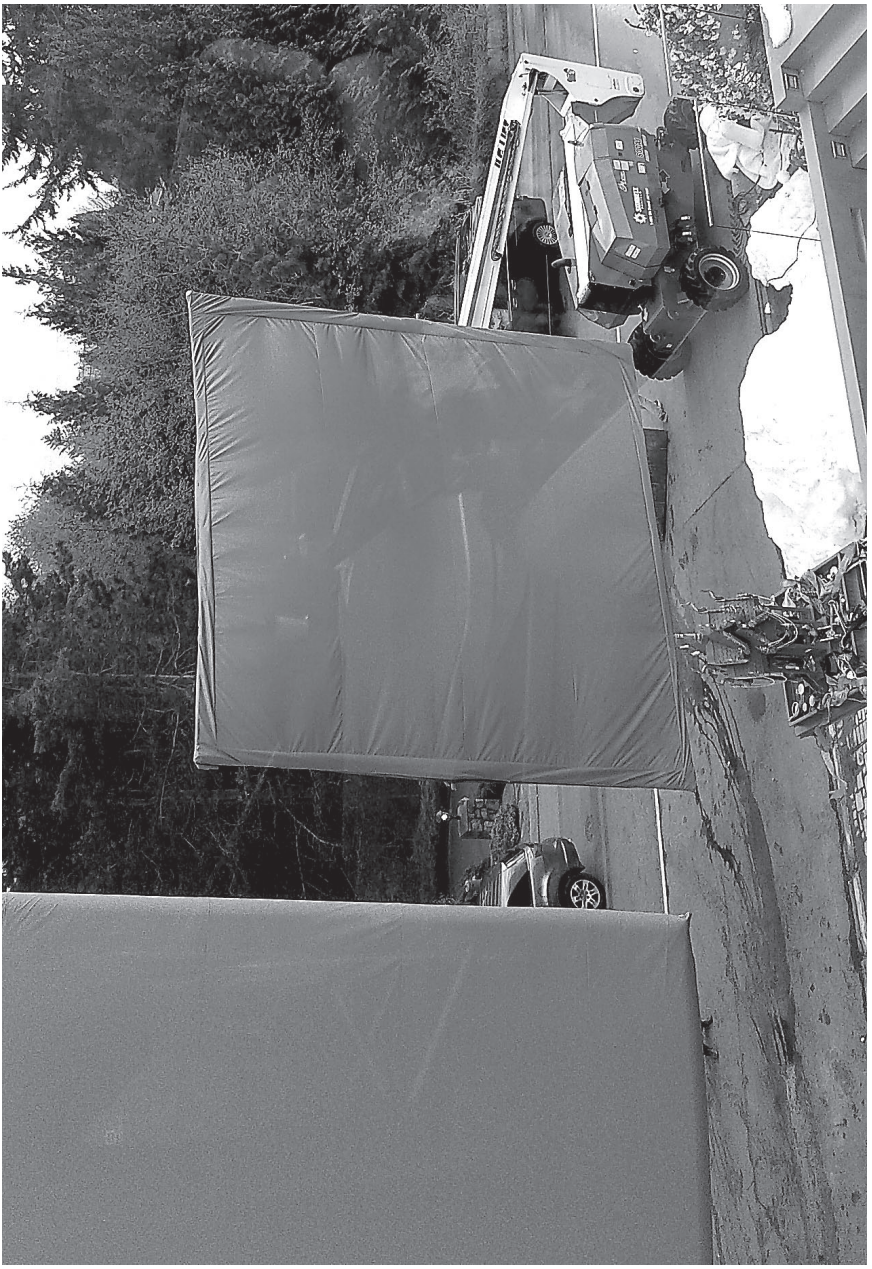
537-538. Rectangular beams decorating a bandshell. White Rock, British Columbia.



538.



539.



539-542. Front and back of rectangular green screens used in filming a movie. West Vancouver, British Columbia.



541.

542.



543. Decorative rectangles on the doors of a home. These rectangles are placed parallel and perpendicular with the edges of the doors. Charlottetown, PEI.



544. Rectangles on the door of a dentist's office. Notice that the sign in the window is symmetrical and the words on the sign are centered. Charlottetown, PEI.



545. Rectangles on the doors of a house and garage. Notice the symmetrical structure of the house entrance, the repetitive structure of the garage door, and the equidistant horizontal lines on the sides of the house and garage. Charlottetown, PEI.



546. Rectangles in a metal gate in a church. Notice the use of symmetry. There is a stairway with a diagonal handrail in the background. Charlottetown, PEI.

547. (left) Rectangular pattern on a building floor. Notice the design is centered on the floor, lined up, repetitive, and parallel and perpendicular with the walls. Charlottetown, PEI.

548. (right) Rectangular design on a building floor. Charlottetown, PEI.

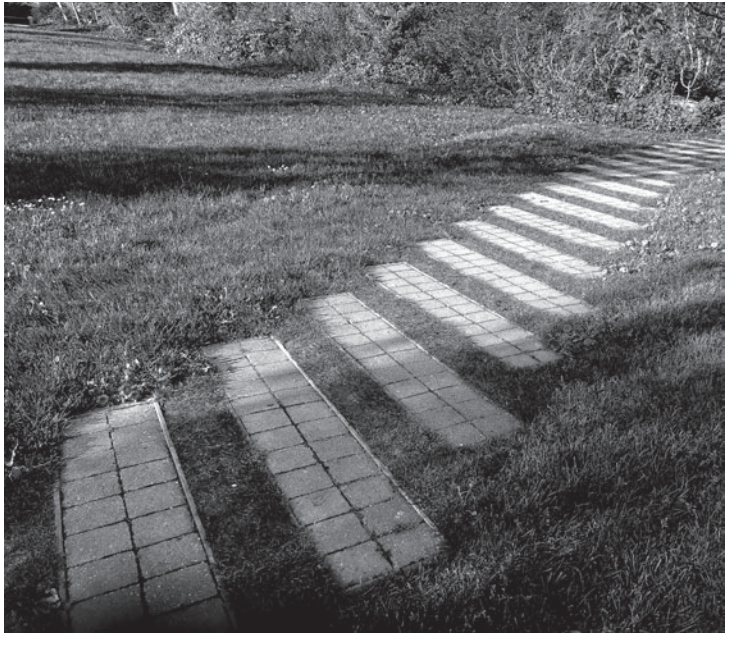


549. (left) Checkerboard pattern on the floor of a supermarket. Notice that the floor design is parallel with the cases of food. Charlottetown, PEI.



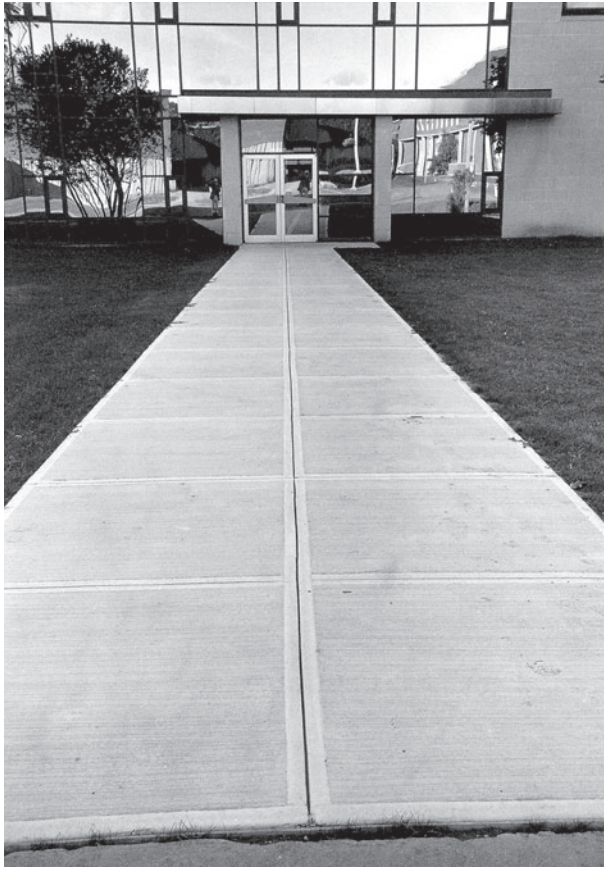
550. (right) Rectangular design on a building floor. Notice that the sign over the door is centered. Charlottetown, PEI.





551. (left)
Rectangular design on a carpet in a timeshare hotel. National Harbor, Maryland. H.S.

552. (above)
Rectangular walkway in a park. Fleetwood, British Columbia.



553. (left) Rectangular design of pavement at the entrance to a building. Charlottetown, PEI.

554. (right) Rectangular design on the pavement and on the spaces around the trees. Notice the use of repetition, and that the trees are in a line and equidistant from each other. Vancouver, British Columbia.





555. Rectangular design on a circle on the floor in a men's clothing shop. Toronto, Ontario.



556. Rectangular furniture and floor design in an administrative building in a university. Charlottetown, PEI.



557-558. Rectangular decorative frame above the serving tables at a restaurant with a self-serve buffet. Notice the rectangular serving tables, ceiling partitions, floor tiles, and dining tables. Also notice the circular lights and plates. Charlottetown, PEI.





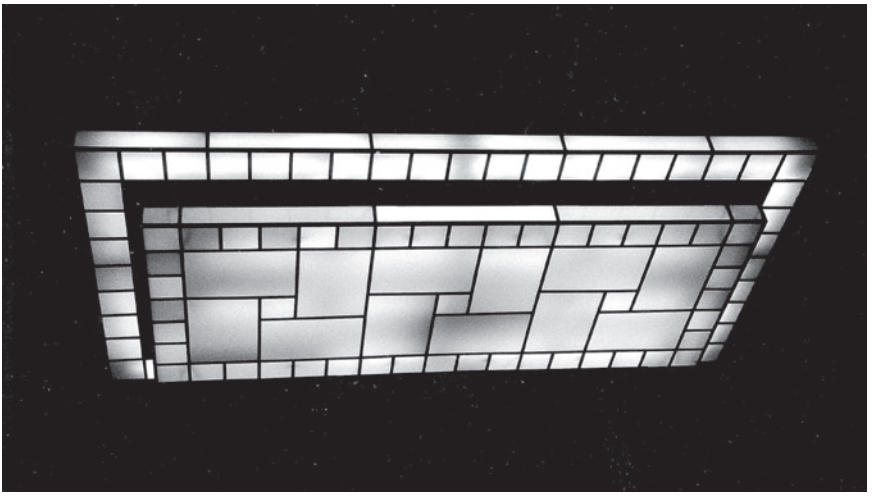
559-560. Rectangular designs on ceilings in hotels. Toronto, Ontario.





561-562. Rectangular chandeliers in a hotel. Charlottetown, PEI.





563. Overhead rectangular light fixture in the foyer of a building. Notice the use of repetition. Toronto, Ontario.



564. Array of rectangular lights over the bar in a hotel. Charlottetown, PEI.

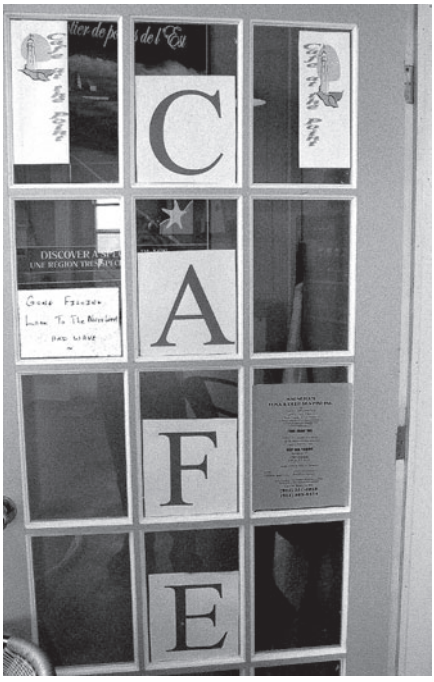
565.
Rectangular cover of a ceiling fan. Charlottetown, PEI.





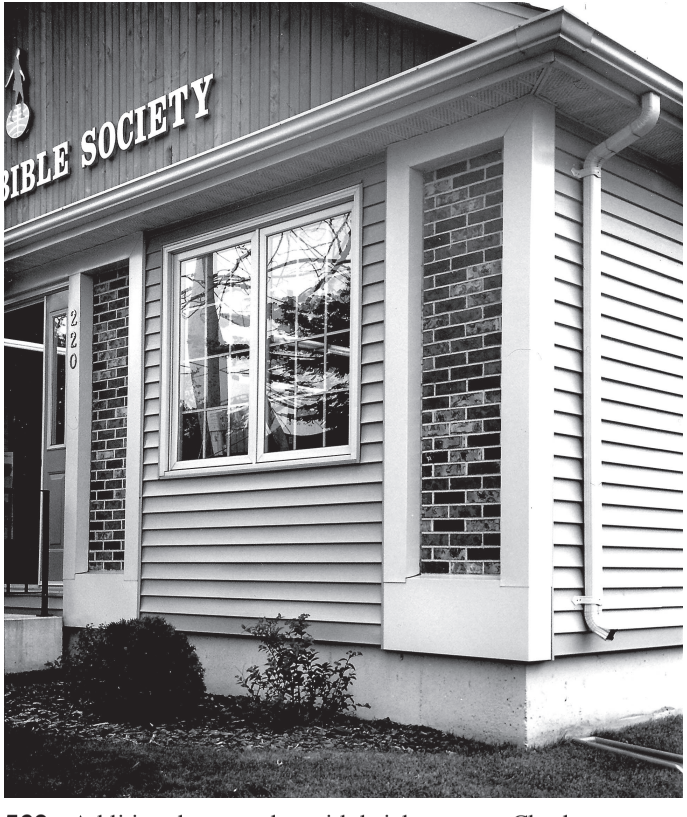
566.
Rectangular shape of a lamp and its overhead support in a hotel. Charlottetown, PEI.



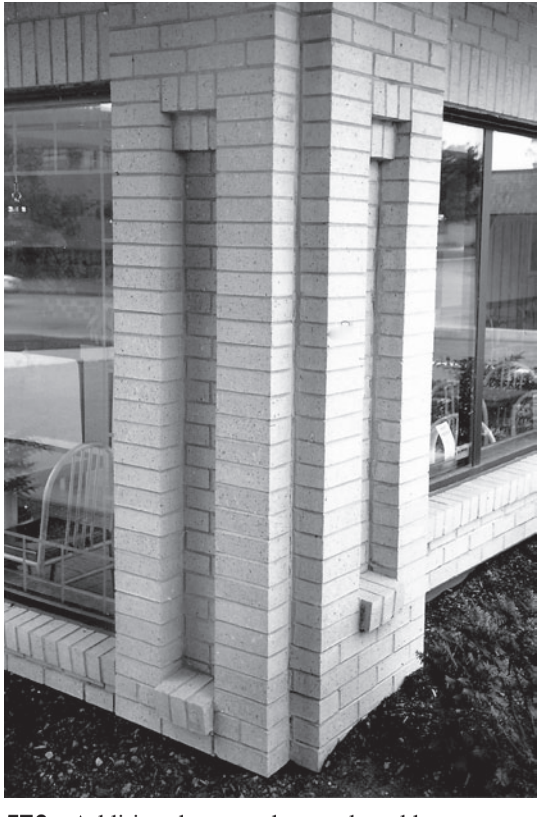


567. (above)
Use of rectangular grids to produce additional rectangles in the windows and door of a residential home. Notice the symmetrical placement of the windows. Charlottetown, PEI.

568. (left)
Use of a rectangular grid to produce additional rectangles in the door of a business. PEI.



569. Additional rectangles with brick centers. Charlottetown.



570. Additional rectangles produced by indentations and extensions. Charlottetown.



571. Additional rectangles produced by multiple indentations on each side of the tower at the city hall. Charlottetown, PEI.



572. Additional rectangles produced by recessed centers on each side of the brick support. Notice that the support is placed parallel and perpendicular to the concrete steps. Charlottetown, PEI.

573. (right) Rectangular Venetian blinds in a window. The blinds are horizontal and equidistant from each other. Charlottetown, PEI.





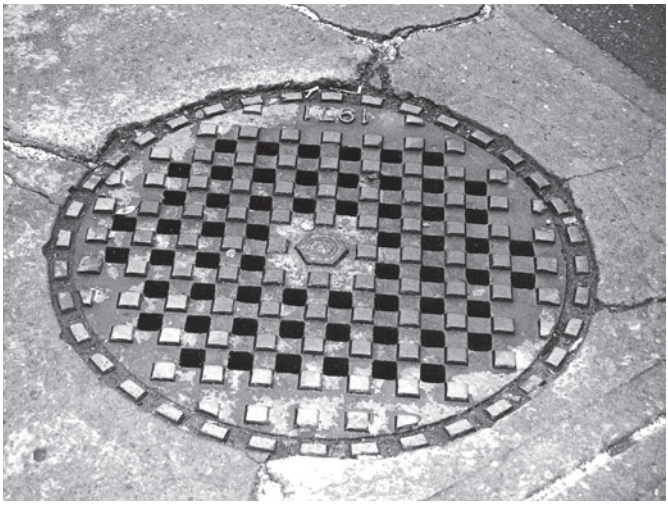


574-575.
The grooves in this frame provide ten additional decorative rectangles surrounding the rectangular mirror. Canmore, Alberta.

576-579. Rectangular street drain covers with rectangular openings. The cover at the lower right is in Halifax, Nova Scotia. The other three are in Prince Edward Island.







580-582. Circular street covers with rectangular designs. The bottom cover is in Toronto, Ontario. The top two are in Prince Edward Island.



583-585. Rectangular designs in an urban park. Notice the parallel and perpendicular placement of the bricks, blocks, benches, and tables relative to the designs. Moncton, New Brunswick.



584-585.





586.



586-587. Rectangular seats, planters, and decorations in a park. White Rock, British Columbia.



588-589. Rectangular benches and steps in an outdoor sports stadium. Charlottetown, PEI.



589.

590. Rectangular fountain. Notice the parallel and perpendicular placement of rectangles. Halifax, Nova Scotia.





591-593. Trash receptacles with rectangular and circular designs and openings. Charlottetown, PEI.





594-595. Rectangular containers on lobster boats used for holding, unloading, and transporting lobsters. Notice that the containers are placed parallel and perpendicular with the sides of the boats and with the sides of the skid on the forklift. Covehead Harbour, PEI.





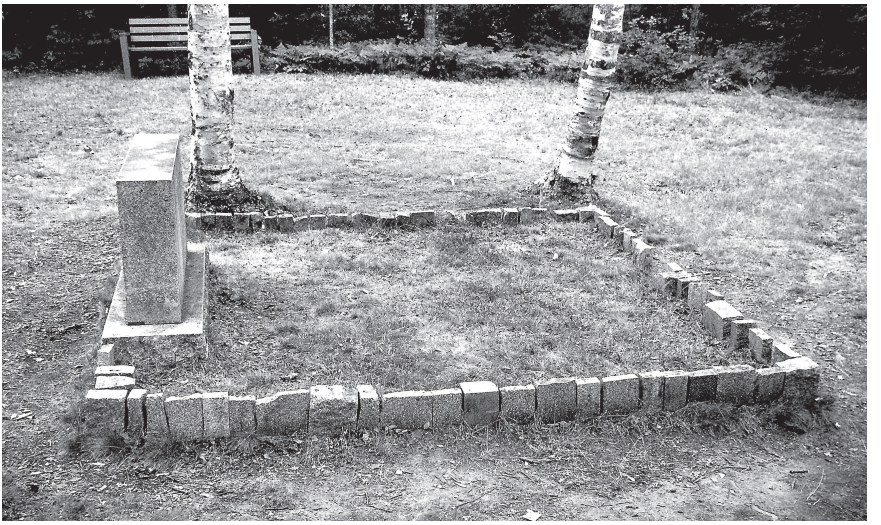
596. Rectangular guard around a tree in a yard. Charlottetown, PEI.



597. Rectangular concrete receptacles on the ground that are used to minimize soil erosion produced by water draining from the roof of a home. Charlottetown, PEI.



598-599. Rectangular burial plot. Notice the rectangular gravestone and support beneath it, and the retangular blocks enclosing the plot. Brudenell Island, PEI.





600. Hedges trimmed in a rectangular shape in front of a home. Charlottetown, PEI.



601. Checkerboard pattern on a lawn. This is achieved by using grass for golf putting greens and a specially designed lawn mower. Charlottetown, PEI.



602. Rectangular sections in a street divider. Notice the rectangular windows in the buildings. Toronto, Ontario.



603. Rectangular glass panels that form the outer wall of a business. Charlottetown, PEI.



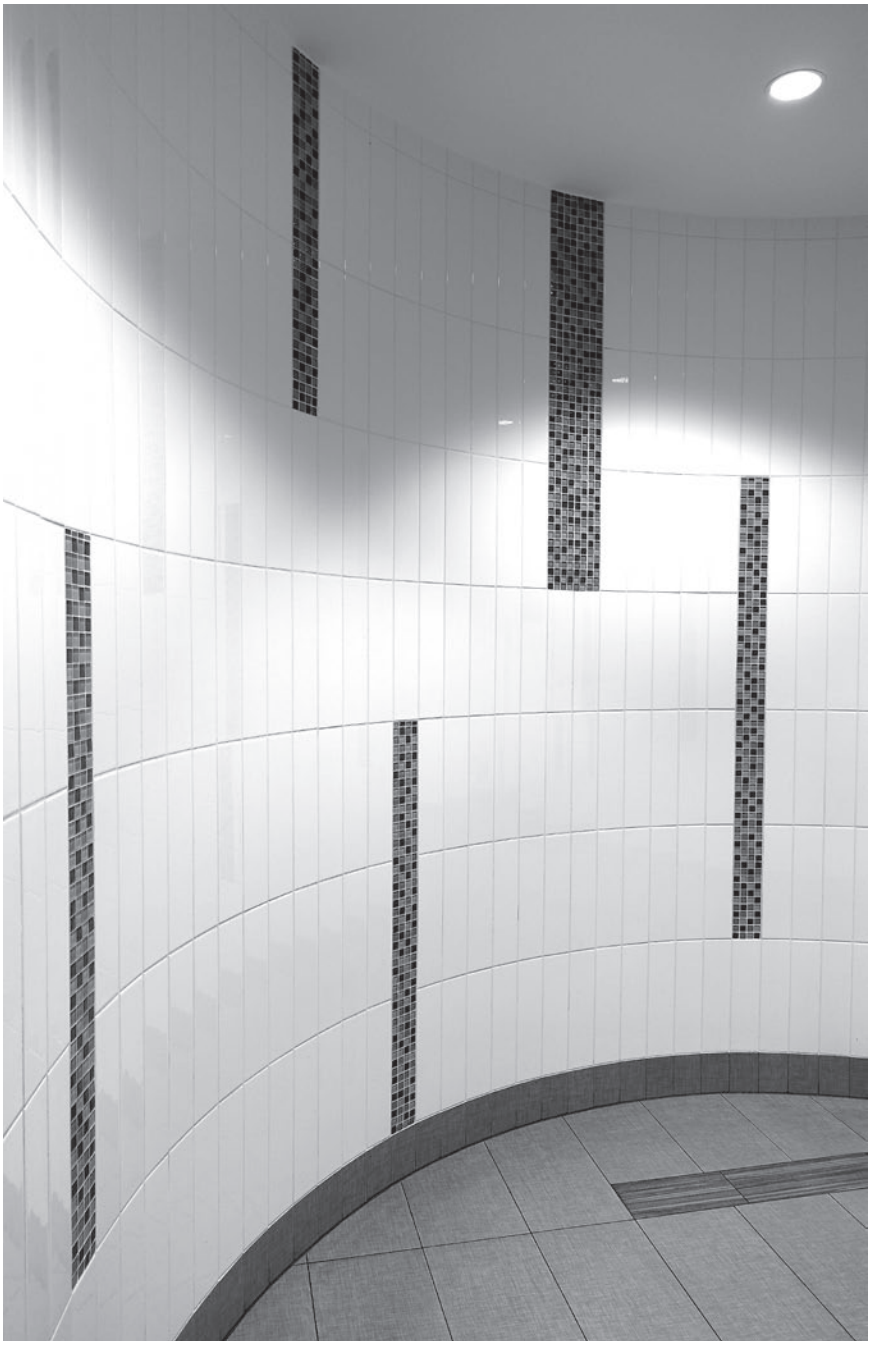
604. Screen of rectangles on the glass window of a beauty parlor. Charlottetown, PEI.



605. (left) Rectangular design on a glass screen in a restaurant. Charlottetown, PEI.



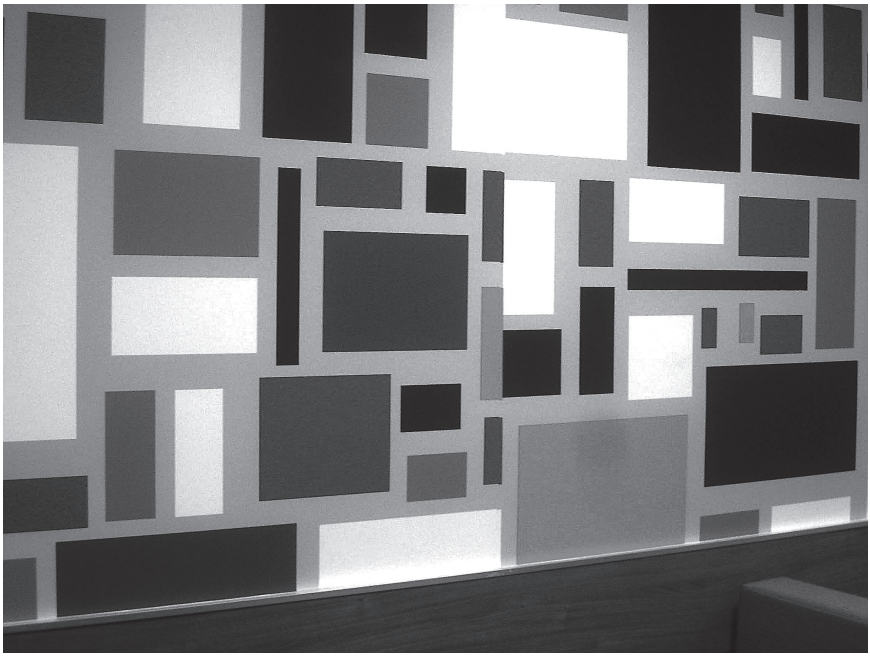
606. (right) Rectangular designs on windows. Vancouver, British Columbia.



607. Rectangular tiles and designs on a wall. Vancouver, British Columbia.



608. Rectangular designs on the walls at the entrance to public toilets in an airport. Vancouver, British Columbia.



609. Design of colorful horizontal and vertical rectangles on a wall above booths in a fast food restaurant. McDonald's Restaurant, Charlottetown.



610. Rectangular design on the reception desk in a hotel. Charlottetown, PEI.



611. Symmetrical arrangement of a rectangular window with rectangular partitions, a table/cabinet with rectangular panels, and rectangular cushioned seats in a hotel. Charlottetown, PEI.



612. Rectangular sink, soap dish, side dish, and tissue dispenser in a hotel room.



613. Rectangular sinks, faucets, and mirrors in a public bathroom in a hotel. Charlottetown, PEI.





614-615. Rectangular designs on rectangular chairs and a rectangular pillow. Vancouver, British Columbia.





616. (above) Checkerboard design on an easy chair for children. Charlottetown, PEI.

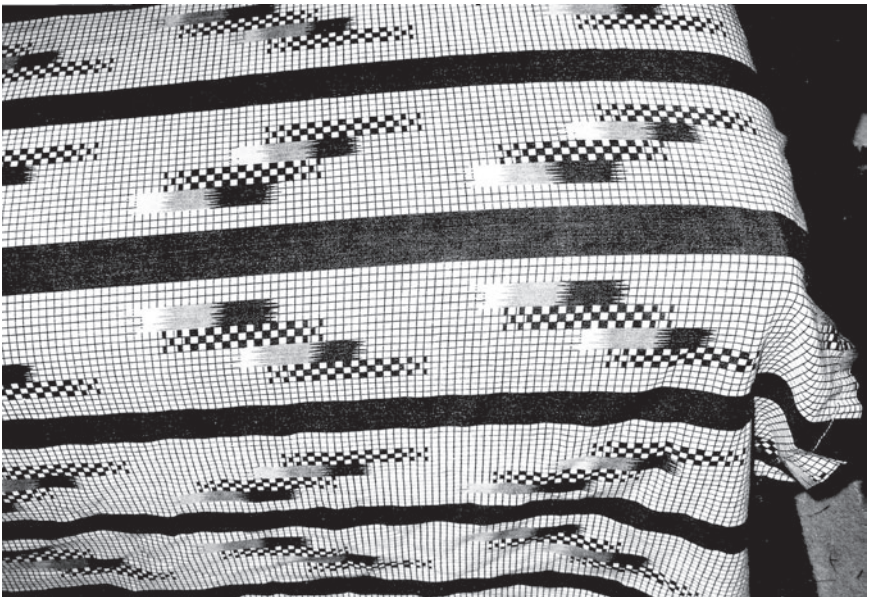
617. (left) Checkerboard design on the wall of a men's bathroom. Montreal, Quebec.

618. (left) Repeated rectangular designs in a living room curtain. Charlottetown, PEI.

619. (right) Rectangular design on a towel hanging in front of a shower stall. Charlottetown, PEI.



620. Checkerboard design on a towel. Notice the circles and horizontal and vertical lines on the frame around the window in the bathroom. Charlottetown.



621. Rectangular designs on a bedspread. Notice the use of repetition and straight lines. Vancouver, British Columbia.



622. Rectangular checkerboard flags outside an automotive business. PEI.



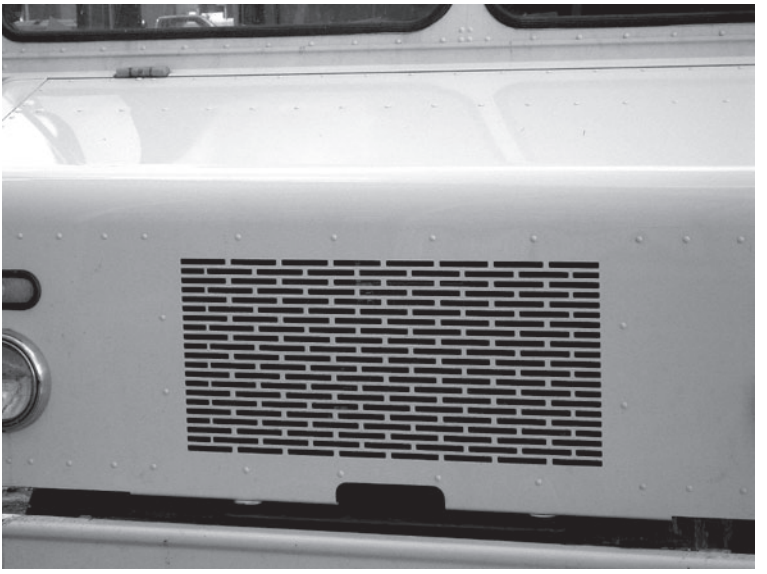
623. Rectangular flag with rectangles in its design. PEI.





624-627. Rectangular designs on the front of vehicles. Notice their symmetrical arrangement. Charlottetown, PEI.

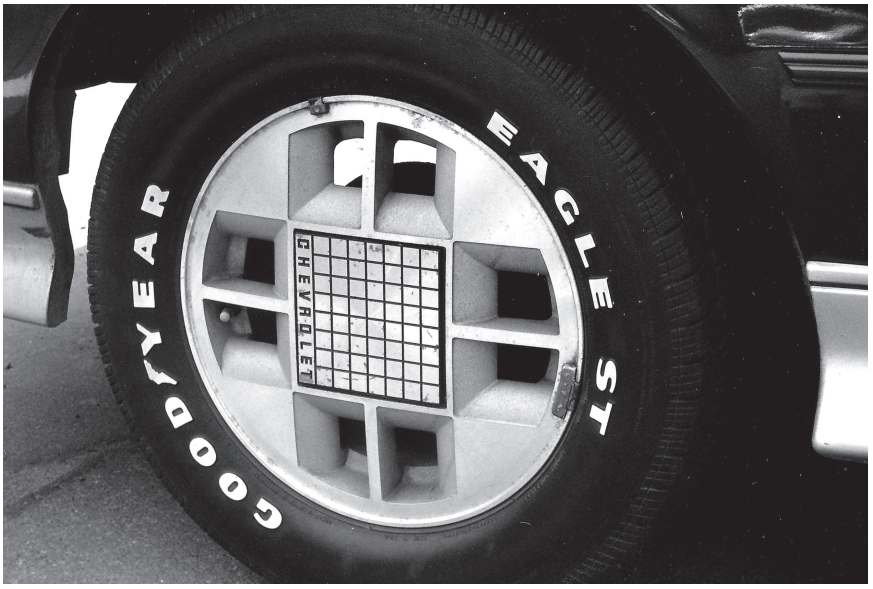




626-627.



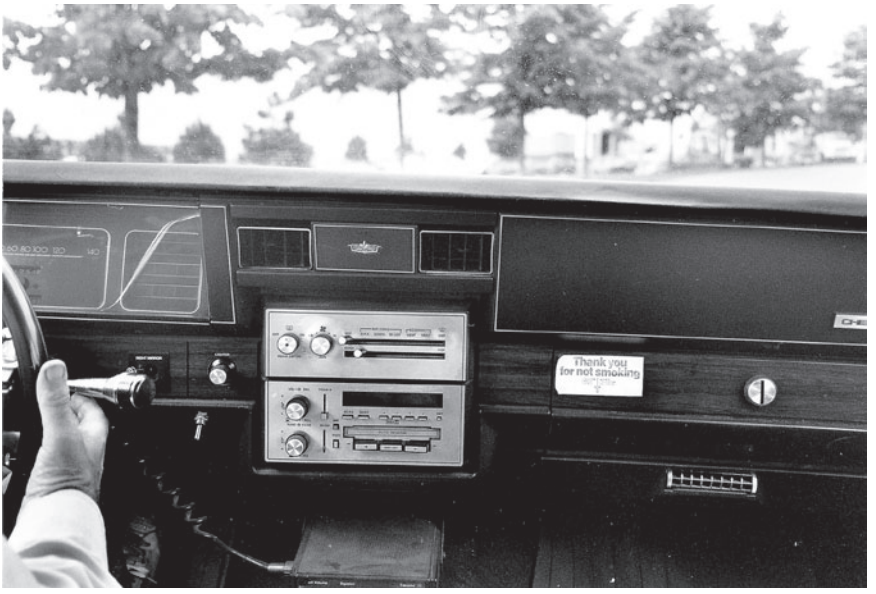
628. Rectangular brand name and license plate on the back of a truck. Both are centered on the truck. Charlottetown, PEI.



629 Rectangular design on a hubcap. Charlottetown, PEI.



630-631. Rectangular designs on dashboards in cars. Charlottetown, PEI.



632.
Rectangular lights, columns, and floor sections in a space vacated by a department store. Charlottetown, PEI.



633. Rectangular overhead frame and packages of inventory. Ikea furniture store. Coquitlam, British Columbia.



634. Rectangular design and arrangement of facilities in a bank in 1967. Notice the use of repetition and that the design and arrangement is parallel and perpendicular. Bank of Montreal, Charlottetown. Accession No. 2320/20-7.



635. Rectangles on the floor and ceiling of a beauty parlor. Notice that the bottles of hair care products and the wigs are grouped on the basis of similarity, and that the lighting, products, and floor designs are repeated. Notice also that one woman is wearing a shirt with a rectangular design. PEI.

636.
Rectangular floor designs, overhead lights, ceiling panels, file cabinets, boxes, column, shelves, bulletin boards, and computer screens in an office. Notice that many of these rectangular designs are repeated. Charlottetown, PEI.

637.
Rectangular tables, cushions, and openings on the sides of the rectangular television screen and fireplace. Timeshare facility. Myrtle Beach, South Carolina. H.S.



638.
Rectangular counters, cabinets, drawers, panels in cabinets, and floor tiles. Kitchen in a timeshare facility. Daytona Beach, Florida. H.S.

639. Rectangular kitchen island with a rectangular design on top. Notice the use of repetition. Fleetwood, British Columbia.



640. Rectangular counters, stool, drawers, cabinets, tiles on wall, and appliances. Notice the use of repetition. Kitchen in a timeshare facility. Palm Beach Shores, Florida. H.S.



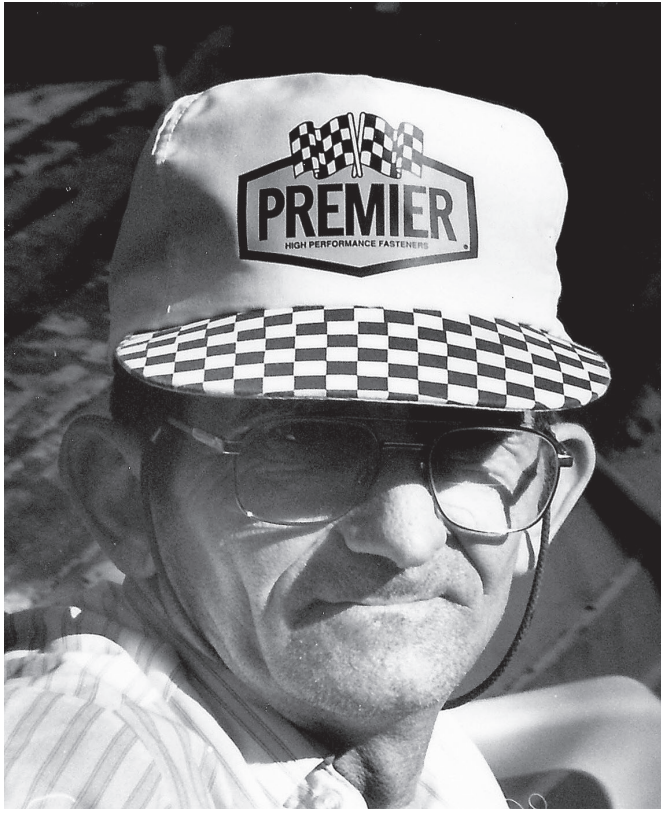
641. Rectangular table, table runner, picture, windows, and design on the backs of chairs. Dining area in a home. Fleetwood, British Columbia.



642-643. Rectangular tables, windows, lighting fixtures, screen for showing visual media, and boards to write on in a classroom. Notice the repetitive designs of the tables, chairs, curtains, and lighting fixtures. Charlottetown, PEI.



644-646. Rectangular patterns on a robe, a sweater, and a backpack. Charlottetown, PEI.



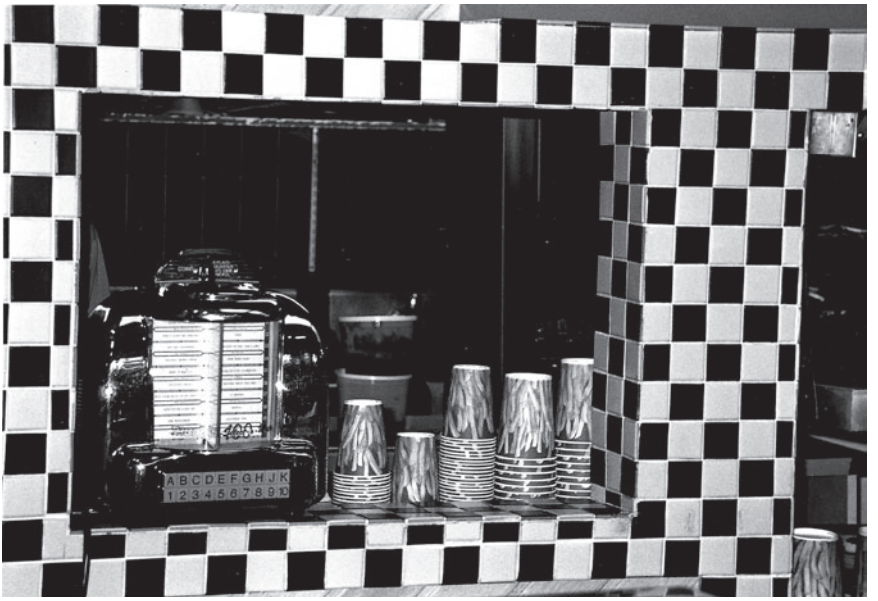
647. Checkerboard design on a hat. PEI.



648. Checkerboard design on a baby's head wear. Montreal, Quebec.



649. Checkerboard design in a fast food stall in a shopping mall.



650. Checkerboard design at a fast food restaurant. Charlottetown, PEI.



651. (above)
Checkerboard canopy over a storefront. Chinatown, Vancouver, British Columbia.



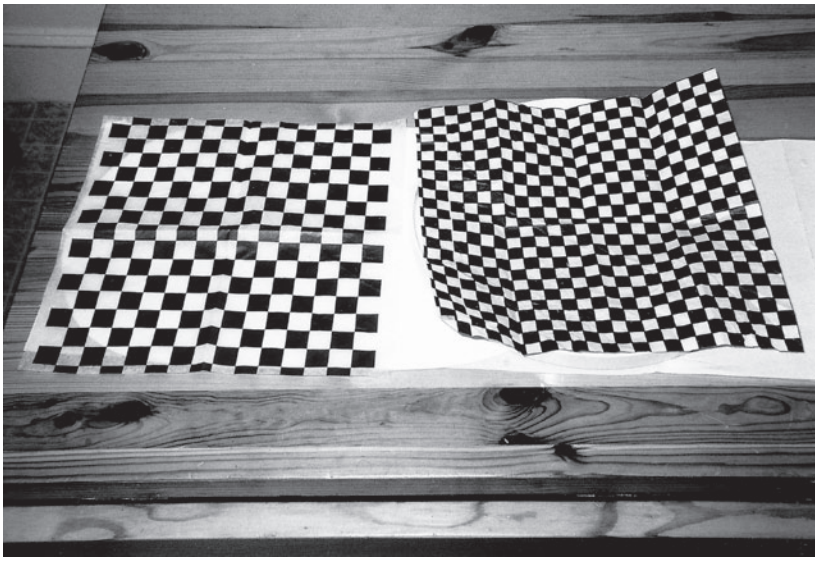
652. (left)
Checkerboard sign outside a hair salon. Toronto, Ontario.

653. Checkerboard skirt on a parade float which advertises a stock car racing track. PEI.



654. (left) Checkerboard pattern that is often associated with racing cars. This is a racing track for miniature cars. PEI.

655. (below) Checkerboard wrapping paper in a store. Canada.





656. Rectangular bulletin board and notices. Notice that each sheet of paper is arranged parallel and perpendicular with the edges of the bulletin board.

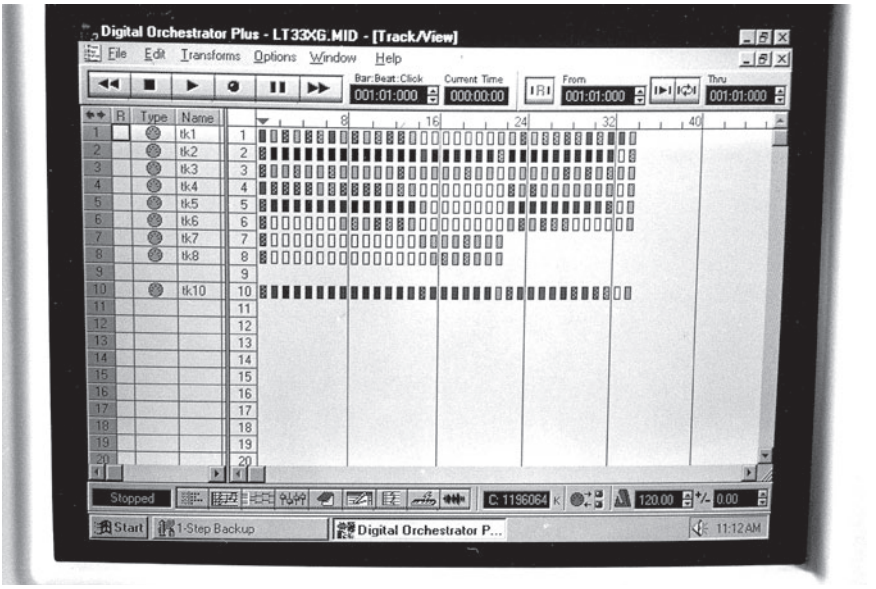


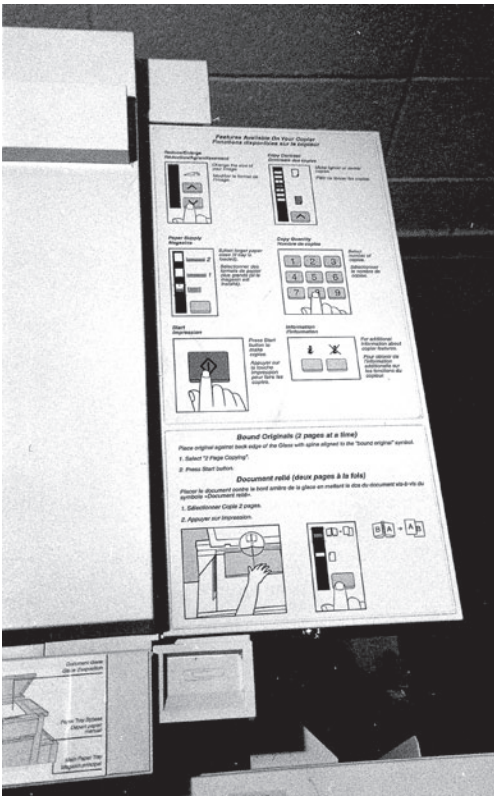
657. Information on the history of local horse racing which is presented in rectangles on a wall. Charlottetown Driving Park, PEI.



658-659. Rectangular pictures of nature scenes in a screen saver on a television screen. Charlottetown, PEI.







660. (above)
Information about a digital piece of music is presented on a computer screen in rectangles.

661. (left)
Diagrams on how to use this photocopier are presented in rectangles.



662-663.
Rectangular cash dispenser with a rectangular screen and rectangular response keys. Charlottetown, PEI.





664. Rectangular board with horizontal and vertical lines creating rectangular spaces for posting the results of dragon boat races. Charlottetown, PEI.



665. Rectangular design of an activity board at a tourist resort in Mexico. E.T.

666.
Rectangular notice board with horizontal and vertical lines creates rectangular spaces on the back wall of an information center in the entrance of an athletic facility. Rectangular black-boards with white borders for notices are located along the bottom of the front counter. Charlottetown, PEI.



667.
Rectangular markers on a map indicating the historic locations of train stations on Prince Edward Island.

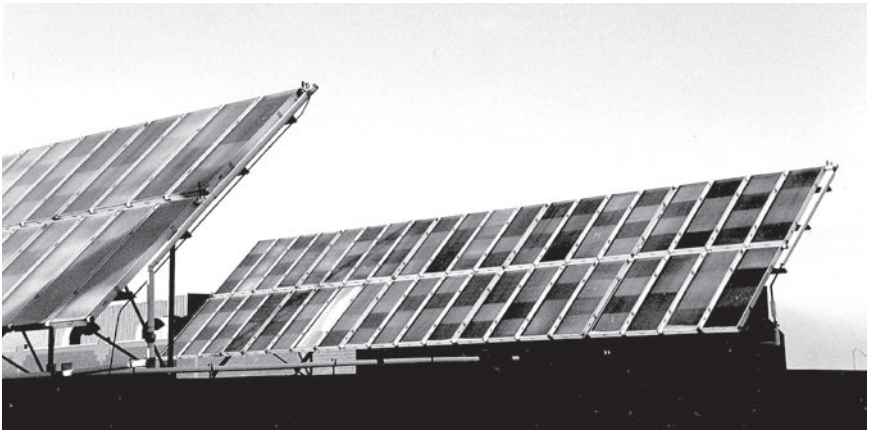
668-669. Rectangular window on a welder's helmet.
Charlottetown, PEI.



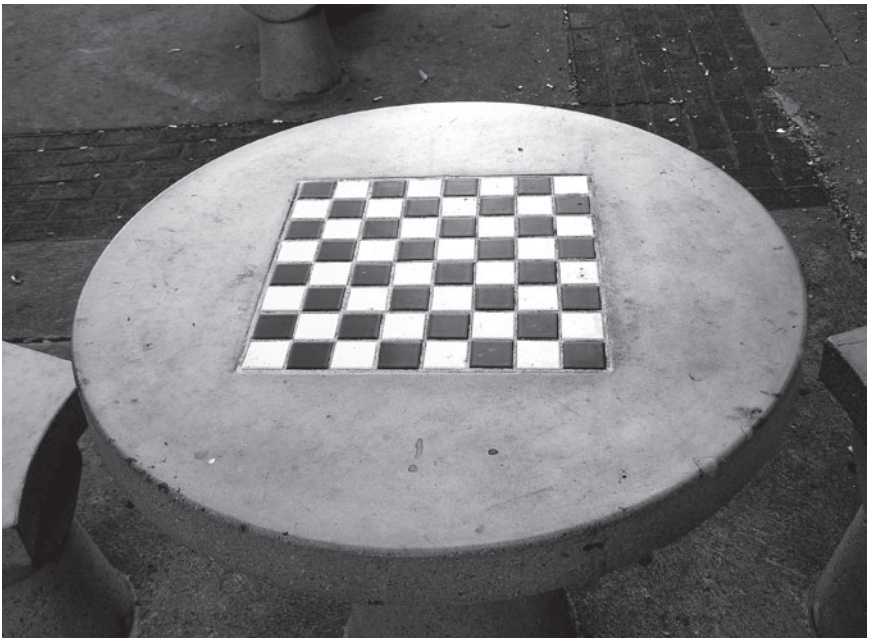
670. (left) Checkerboard pattern on the back of a telephone in a shopping mall. Charlottetown, PEI.



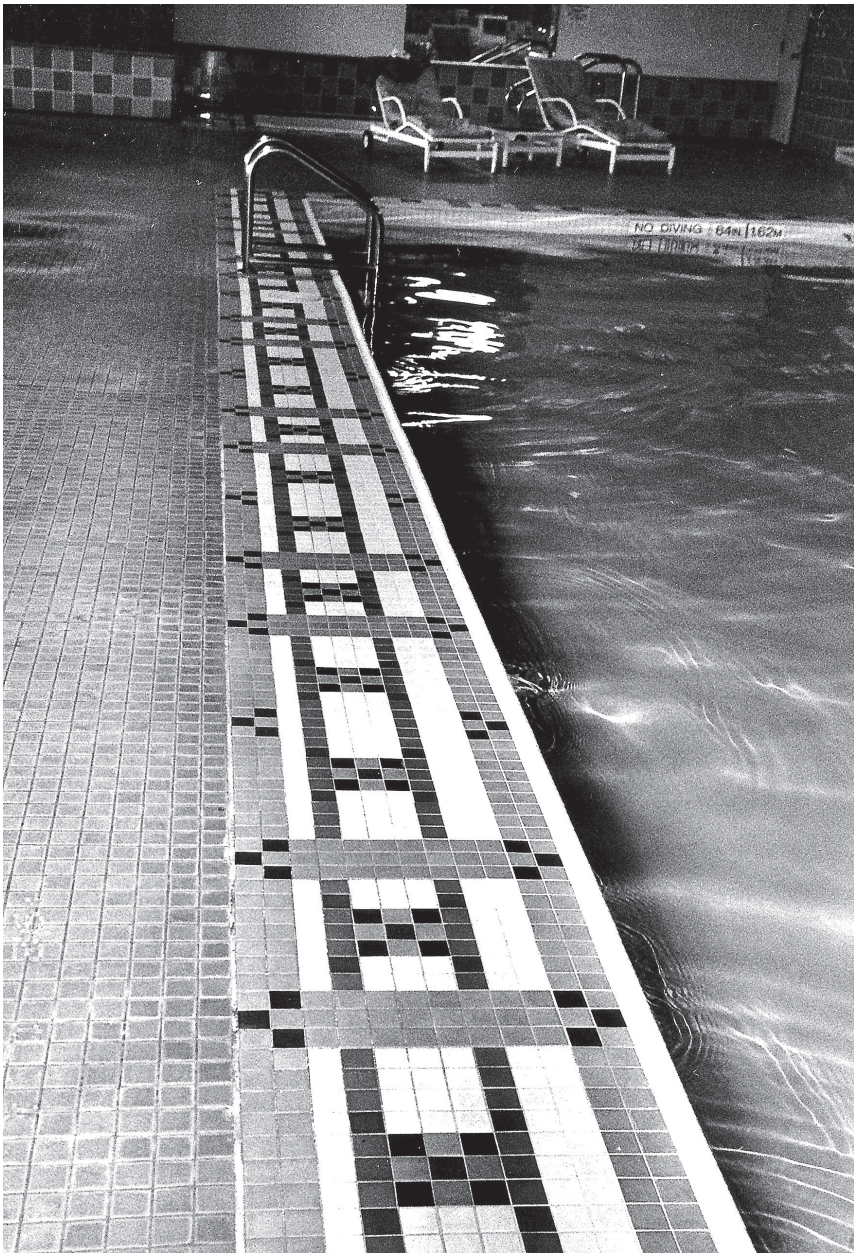
671. (right) Rectangular presents beneath a Christmas tree in an airport. Notice the circular decorations on the tree.



672. Rectangular solar panels. Charlottetown, PEI.



673. Rectangular game board on a circular table outdoors. Windsor, Ontario.



674. Repetitive rectangular design along the border of a rectangular swimming pool in a hotel. Charlottetown, PEI.

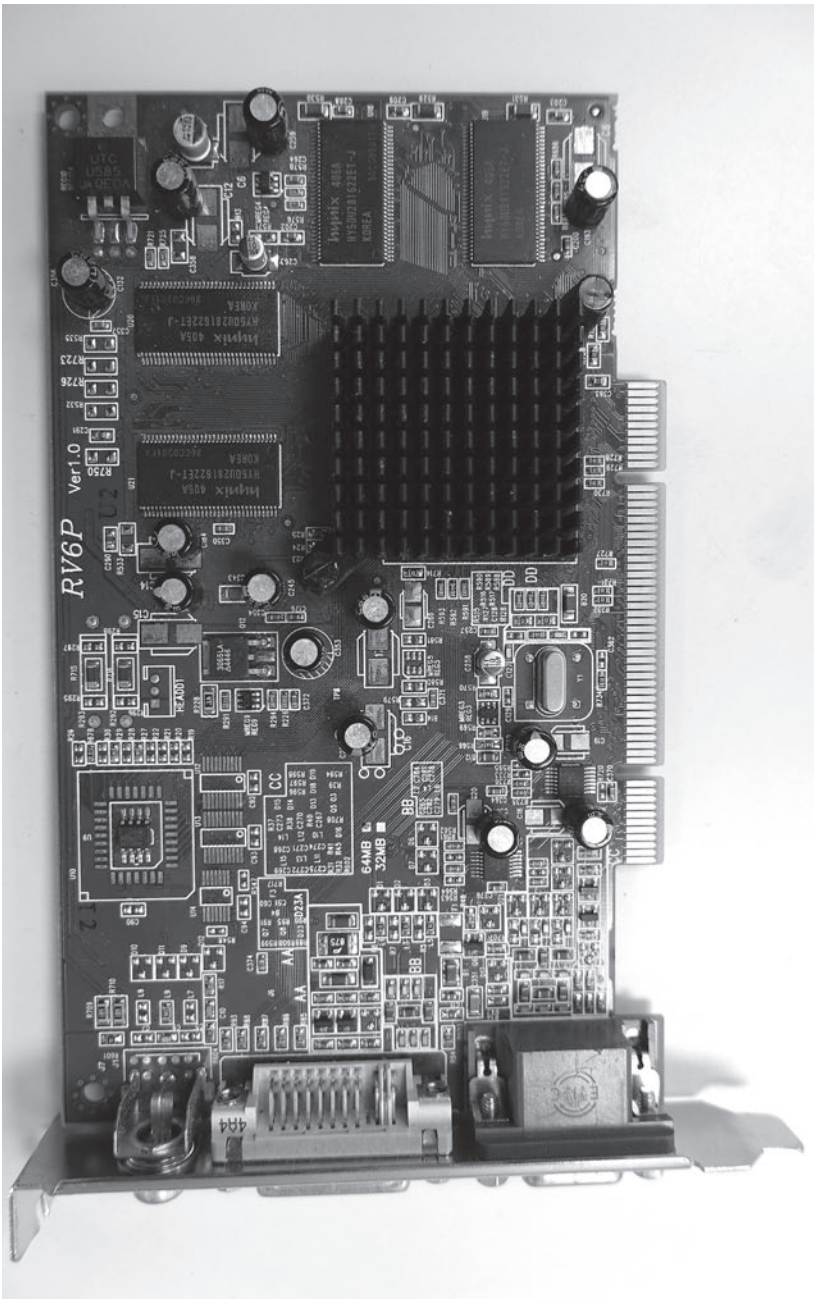


675-676. Rectangular design of a volleyball court which has been constructed in an activity room of a student union building. A volleyball tournament is organized in winter as part of "Beach Blast." Notice the rectangular design of the net and the windows. Charlottetown, PEI.



676.

677.
Various designs in rectangular frames arranged on the rectangular façade of a building. Vancouver, British Columbia.



678. Components on a sound board for a computer are outlined by rectangles.



679. Rectangular structures, doors, and windows in a home. Notice that the window blinds are horizontal and equidistant. Jamaica. L.W.



680. Horizontal and vertical rectangles. Notice the use of repetition and horizontal lines. Santo Domingo, Dominican Republic.



681-684. Decorative rectangles on buildings. Botanical garden. Santo Domingo, Dominican Republic.



682. Notice the use of repetition and circles.





683-684.

685. (left) Rectangles in a wall. Notice the use of repetition, the centered window, and the symmetrical arrangement of two pitchers in the window. Santo Domingo, Dominican Republic.

686. (right) Duplicated (repetitive) rectangular designs on balconies. Dominican Republic.



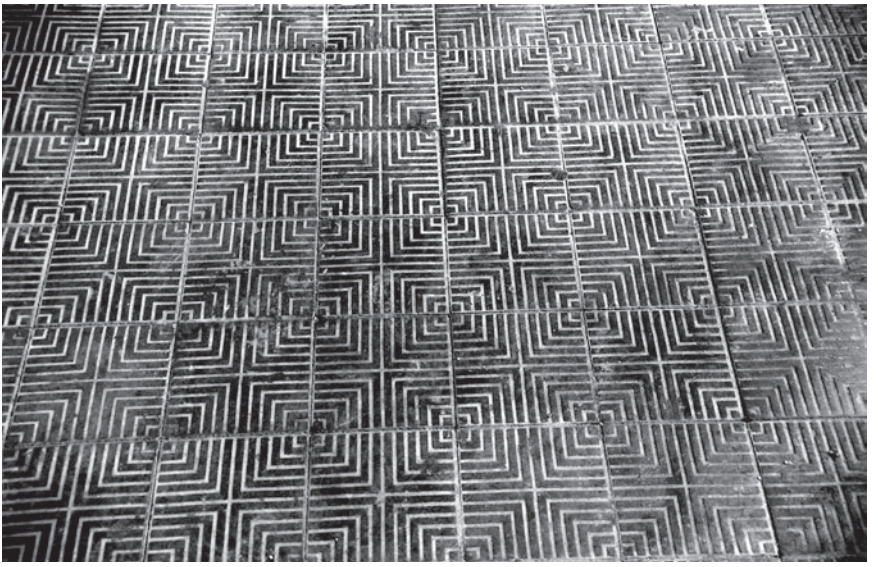
687. (above)
Rectangular openings in a wall. Notice the use of repetition.
Santo Domingo, Dominican Republic.

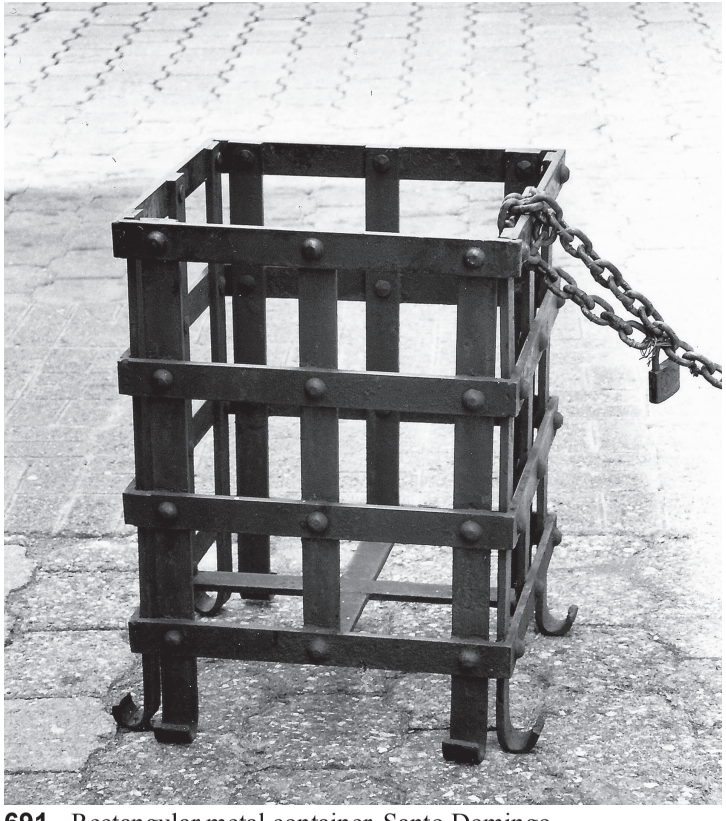


688. (left)
Rectangular designs on a wall.
Santo Domingo, Dominican Republic.



689-690.
Rectangular floor patterns.
Santo Domingo,
Dominican Republic.

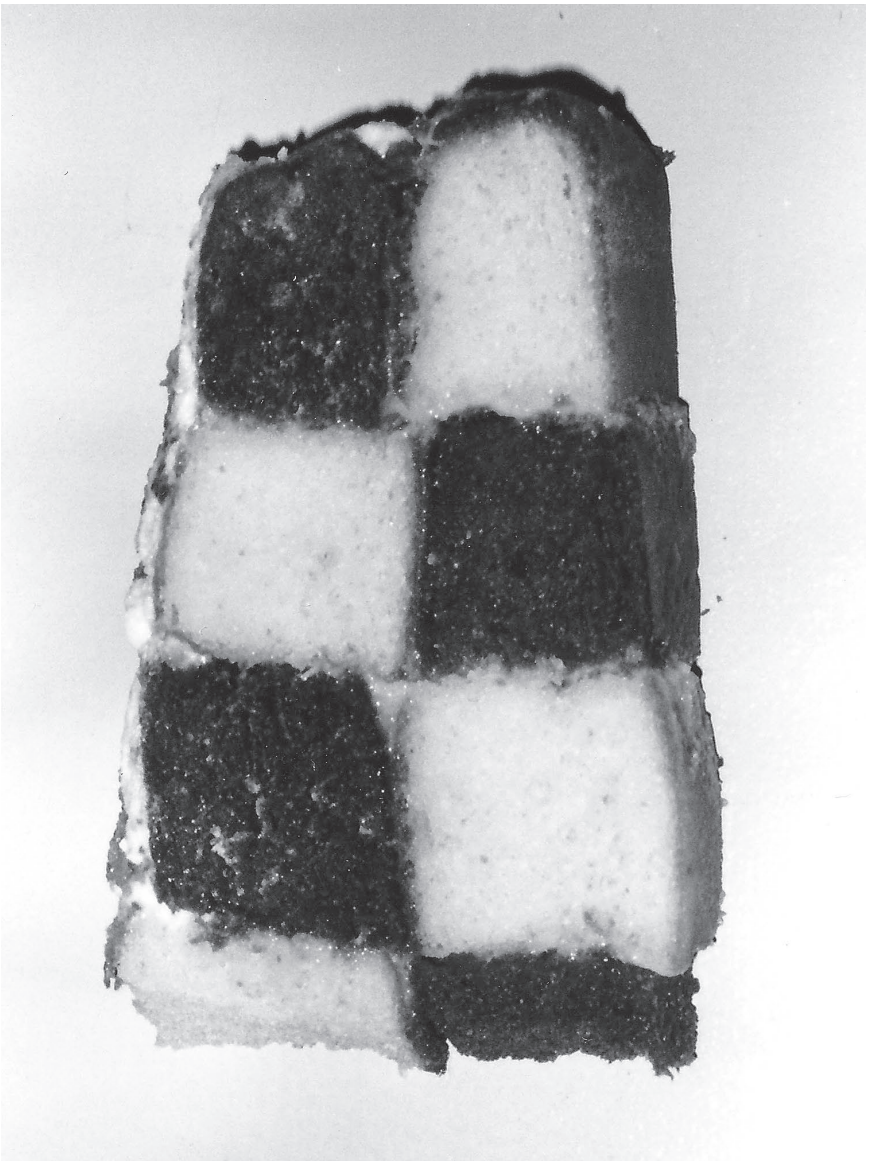




691. Rectangular metal container. Santo Domingo, Dominican Republic.



692. Rectangular design of a metal window frame to prevent theft. Santo Domingo, Dominican Republic.



693. A slice of Guatemalan psicodélico (psychedelic) cake.

3. Repetition

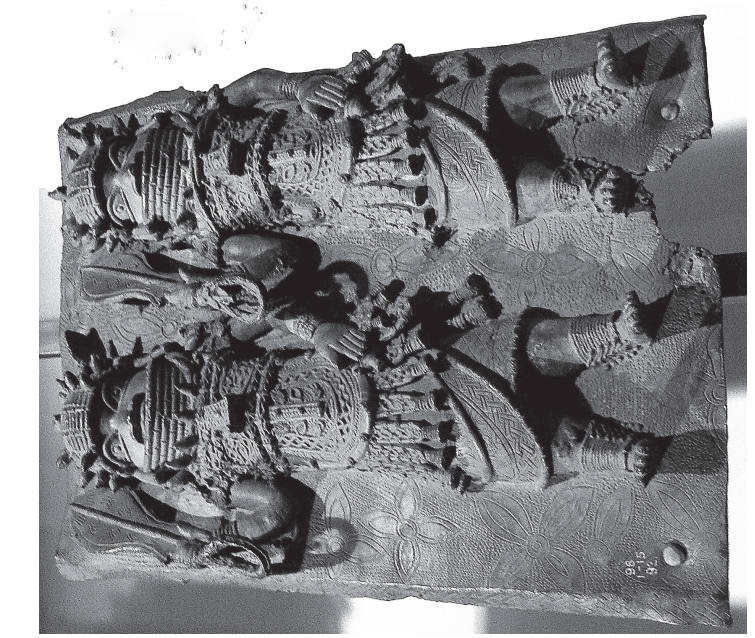
3.1. Nature 743
3.2. Africa 744
3.3. The Middle East 752
3.4. Europe 826
3.5. South Asia 881
3.6. Southeast Asia 891
3.7. East Asia 934
3.8. Oceania 949
3.9. The Americas 955
3.10. Repetition applied symmetrically 1030

3.1. Nature



694. Repeated "eyes" on a peacock's feathers. Hawaii.

3.2. Africa



696.



695-697. Repeated figures. 16th century AD. Benin, Nigeria. The British Museum.



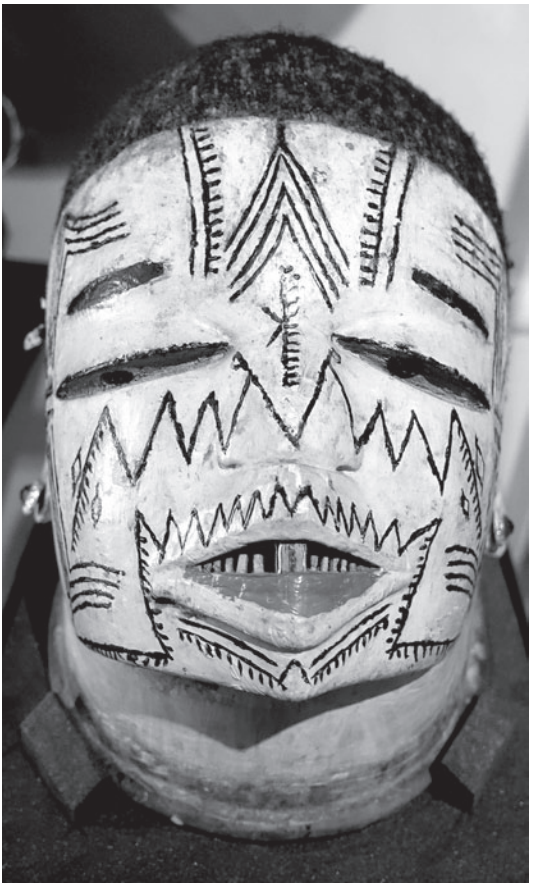
697.



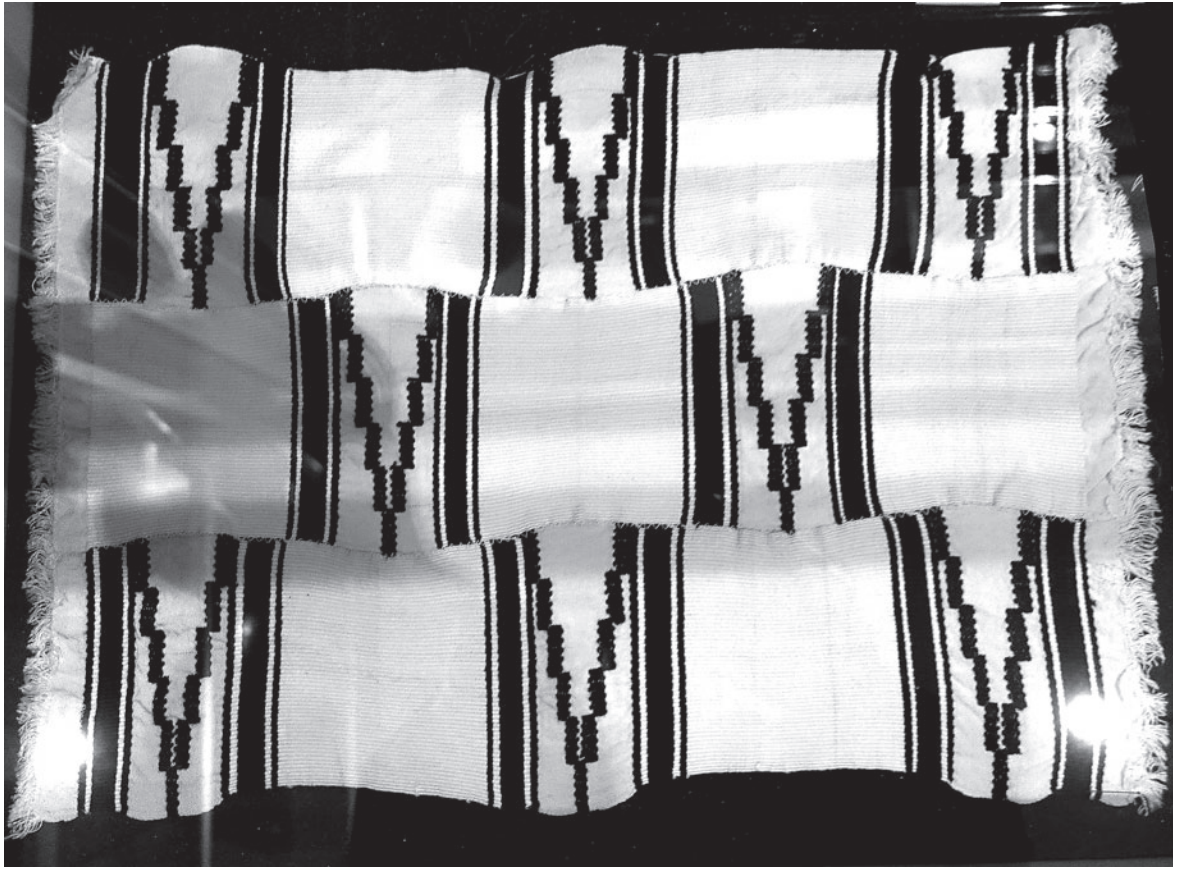
698. Repeated features on a grave marker pot. 19th century AD. Igbo, Nigeria. The British Museum.



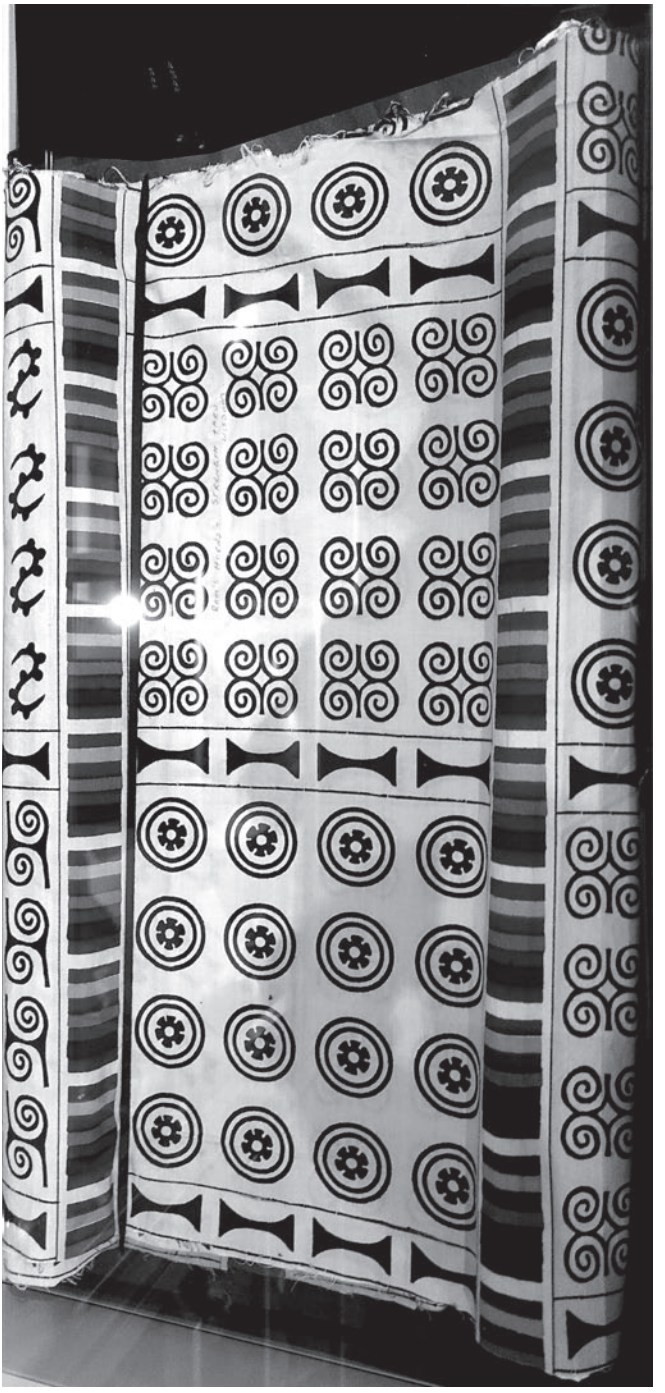
699. (left)
Repeated design. Akuaba, fertility dolls. Fanti. Museum of Anthropology, Vancouver, British Columbia.



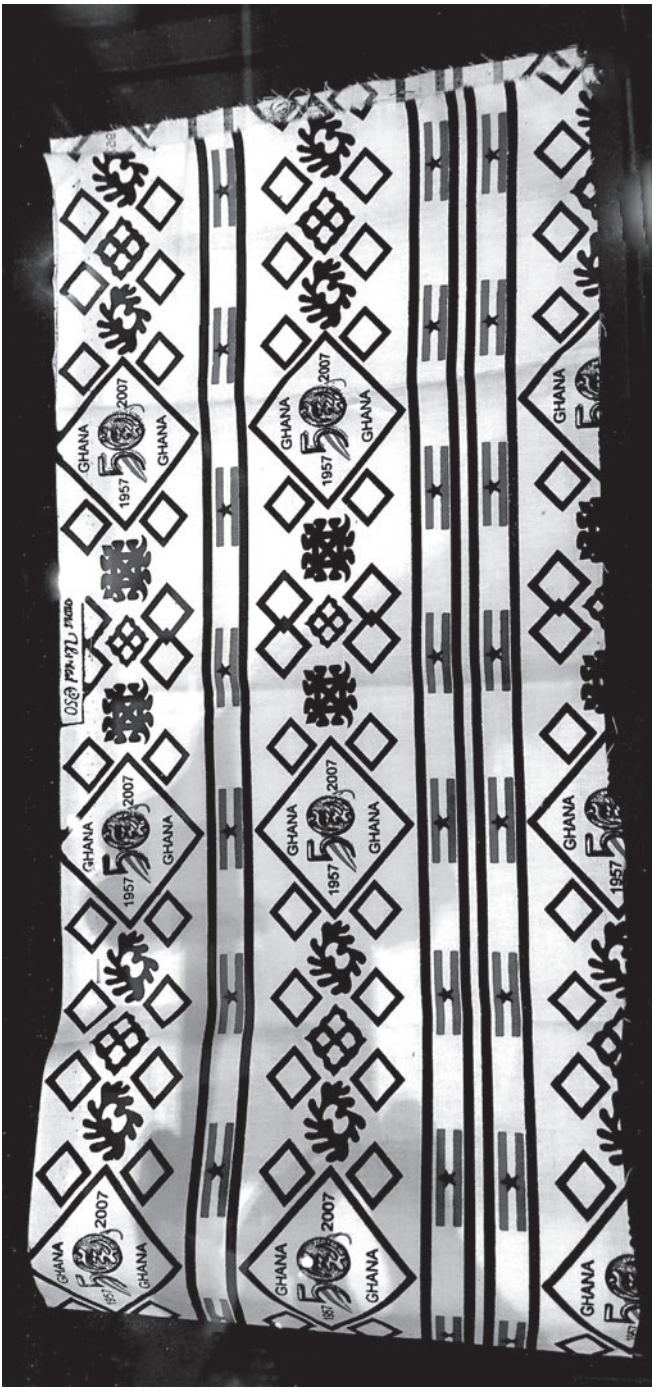
700. (above)
Repeated features on a mask. Notice the symmetrical placement of designs. Makonde. Museum of Anthropology, Vancouver, British Columbia.



701.
Repeated designs on textile. Asante? Museum of Anthropology, Vancouver, British Columbia.



702. Repeated designs on textile. Guinea Coast. Museum of Anthropology, Vancouver, British Columbia.



703. Repeated designs on textile. Ghana. Museum of Anthropology, Vancouver, British Columbia.



704.



704-706. Repetitive designs. Notice the use of rectangles on the object above. Guinea Coast? Museum of Anthropology, Vancouver, British Columbia.

705.



706.



707. (left) Repeated designs on a necklace. Zulu. Museum of Anthropology, Vancouver, British Columbia.

3.3. The Middle East



708. (right) Repeated cattle and handles on a pot. Museum of Anatolian Civilizations, Ankara, Turkey.

709. (below) Repeated handles, lines, circles, and cattle on a pot. 18th century BC. Kultepe. Museum of Anatolian Civilizations.

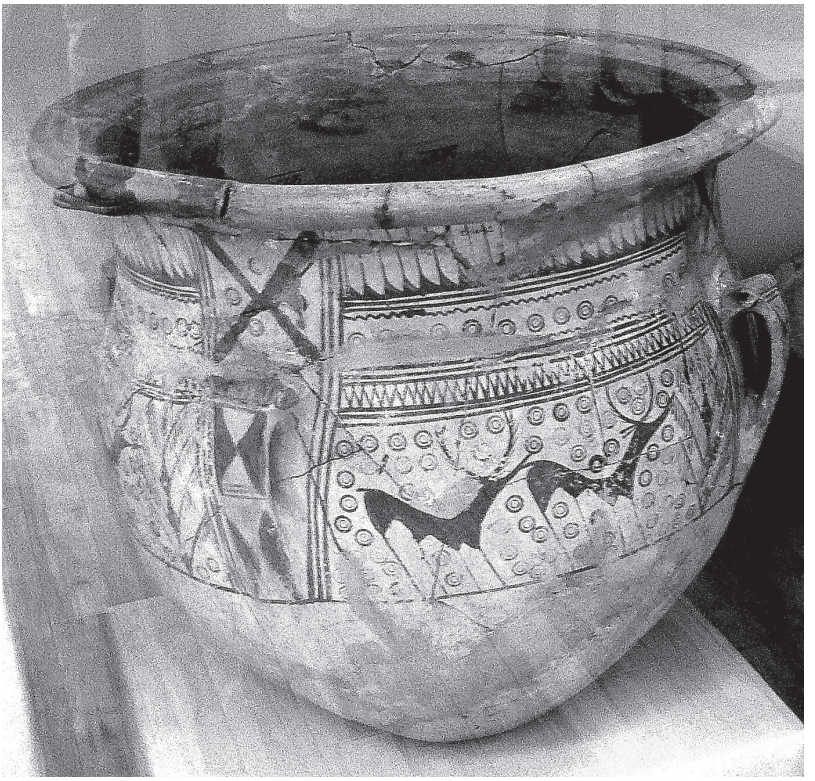






710. (left) Repeated design on the body of a pitcher. 3rd millennium BC. Ankara area. Museum of Anatolian Civilizations.

711. (above) Repeated patterns. 2nd millennium BC. Bronze Age. Northeast Anatolia. Istanbul Archaeological Museum.



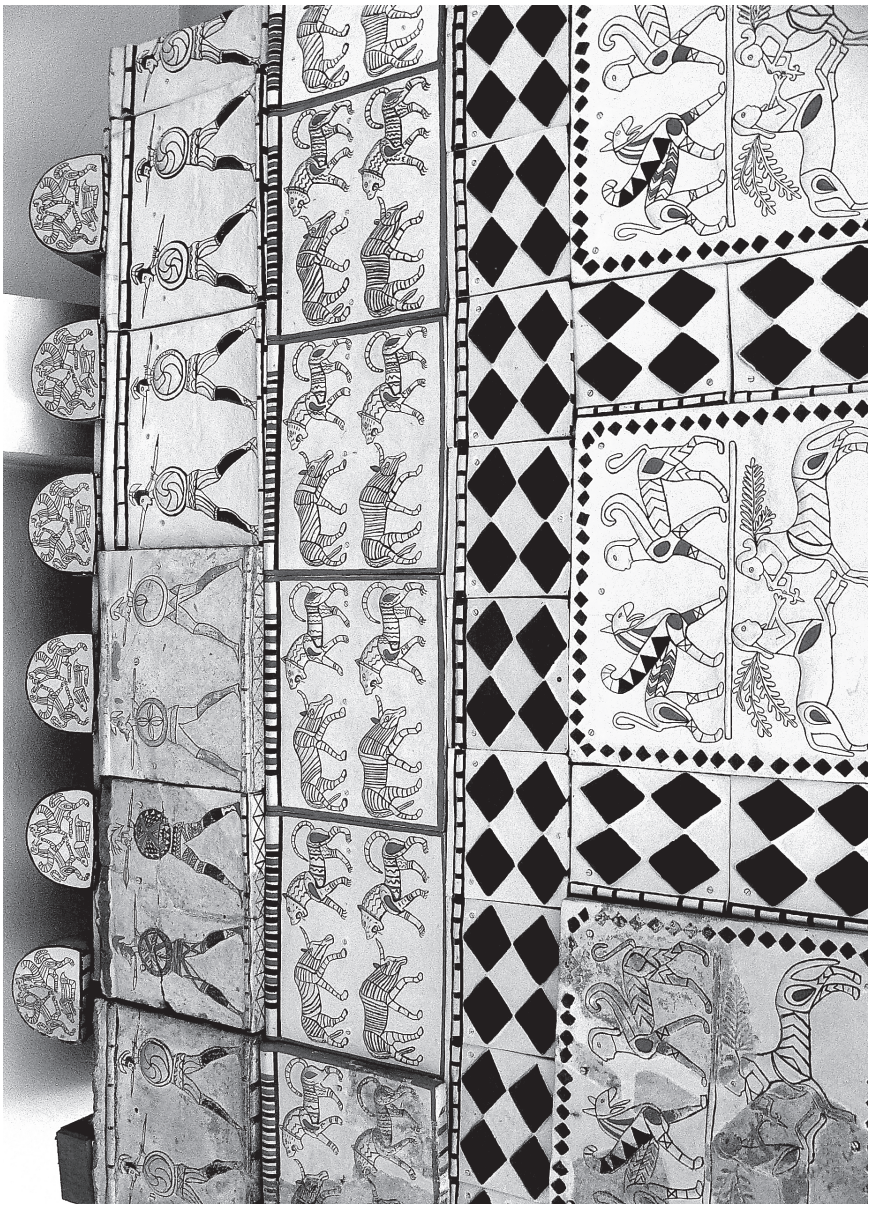
712-713. Repeated animals, circles, and other designs. Museum of Anatolian Civilizations.



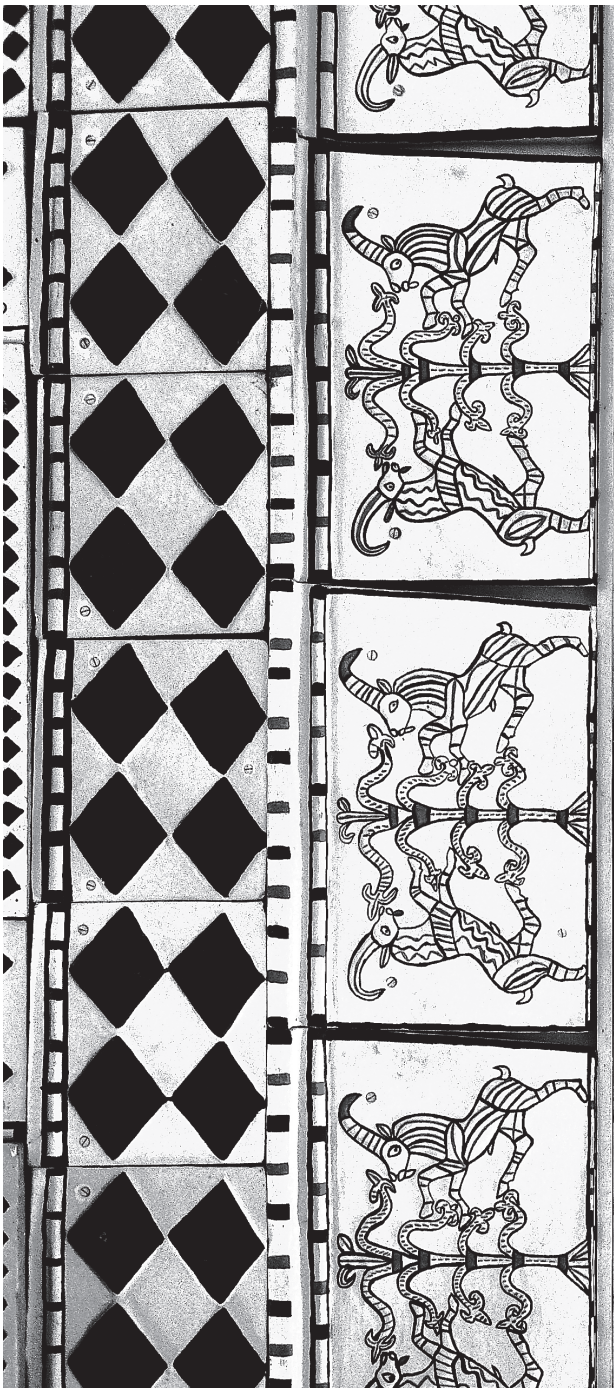


714.
Repeated design on the clothing of a statue.
3rd millennium BC.
Mesopotamia.
Archaeological Museum, Istanbul, Turkey.

715-717.
Reconstruction of decorations on a building from Pazarli, Phrygia. Notice the use of repetition and symmetry.
1st millennium BC.
Museum of Anatolian Civilizations.



716.



717.

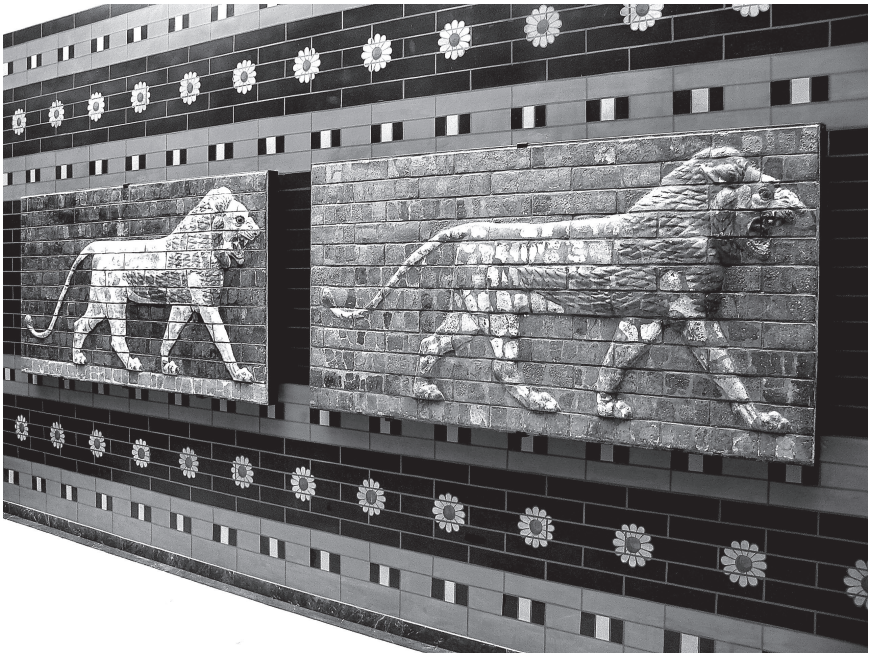
718.
Repeated design of goddesses with water. About 2130 BC. Lagash, Mesopotamia. Archaeological Museum, Istanbul, Turkey.



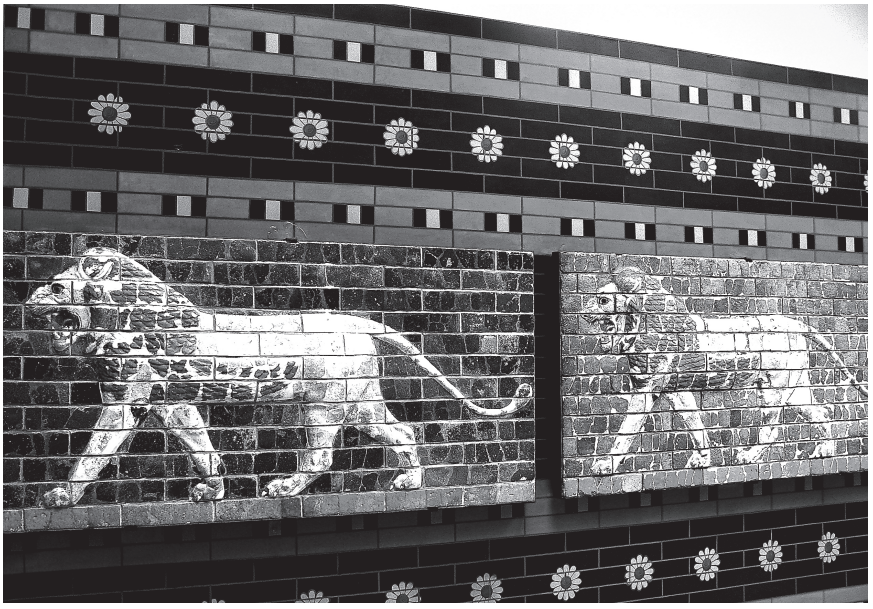


719. (above) Repetition of mace bearers. Assyria. About 800 BC. Archaeological Museum, Istanbul.

720. (left) Repeated decorated horses. 8th century BC. Assyria. The Louvre.



721-722. Repeated lions and decorations. About 575 BC. Babylon. Archaeological Museum, Istanbul.



723.
Similar female figurines.
2nd millennium BC.
Susa, Iran.
The British Museum.



724. Repeated designs on painted pottery. Susa, Iran. The British Museum.



725. Vase with repeated designs of ibexes and "kites." Iron age. The Louvre.



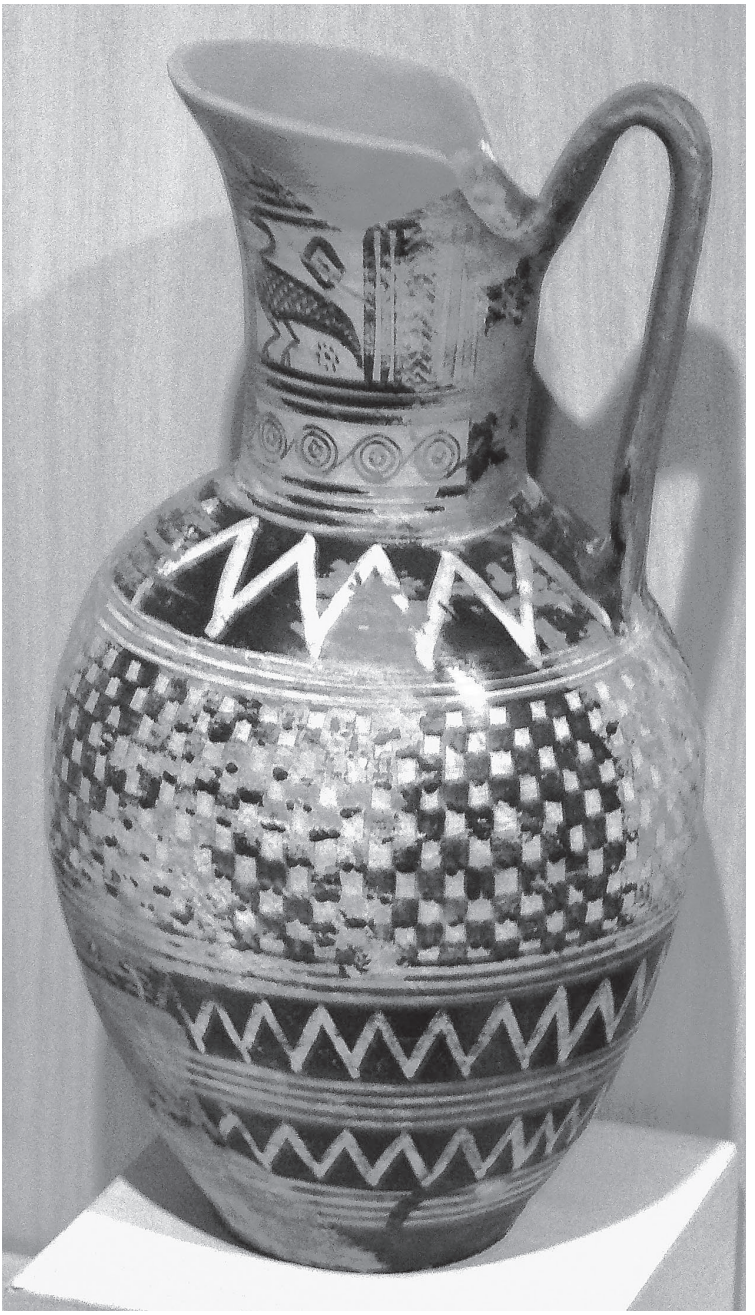
726. Container with repeated designs. Museum of Turkish and Islamic Arts. Istanbul.



727. Repeated design on a container for cosmetics. 8th century BC. Minet el-Beida, Syria. The Louvre.



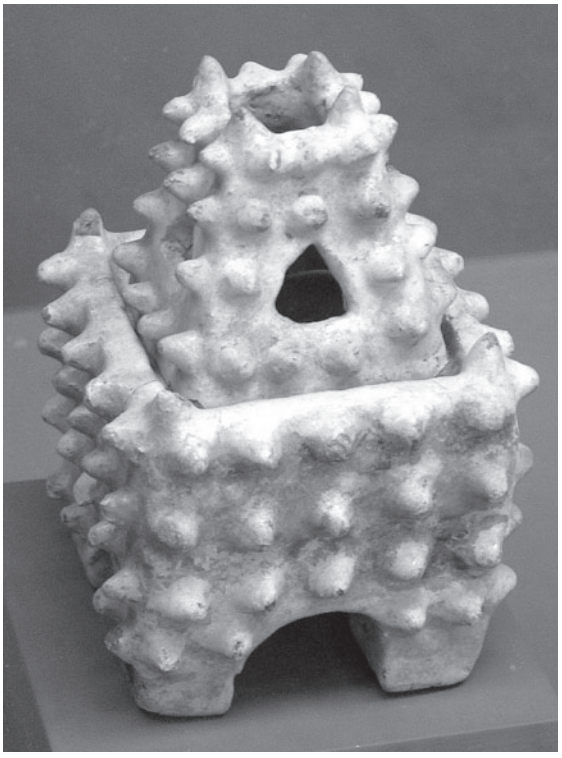
728. Repeated design. 2nd millennium BC. Khabur ware, Mesopotamia. The British Museum.



729. Repeated designs on a jug. Archaeological Museum, Istanbul.



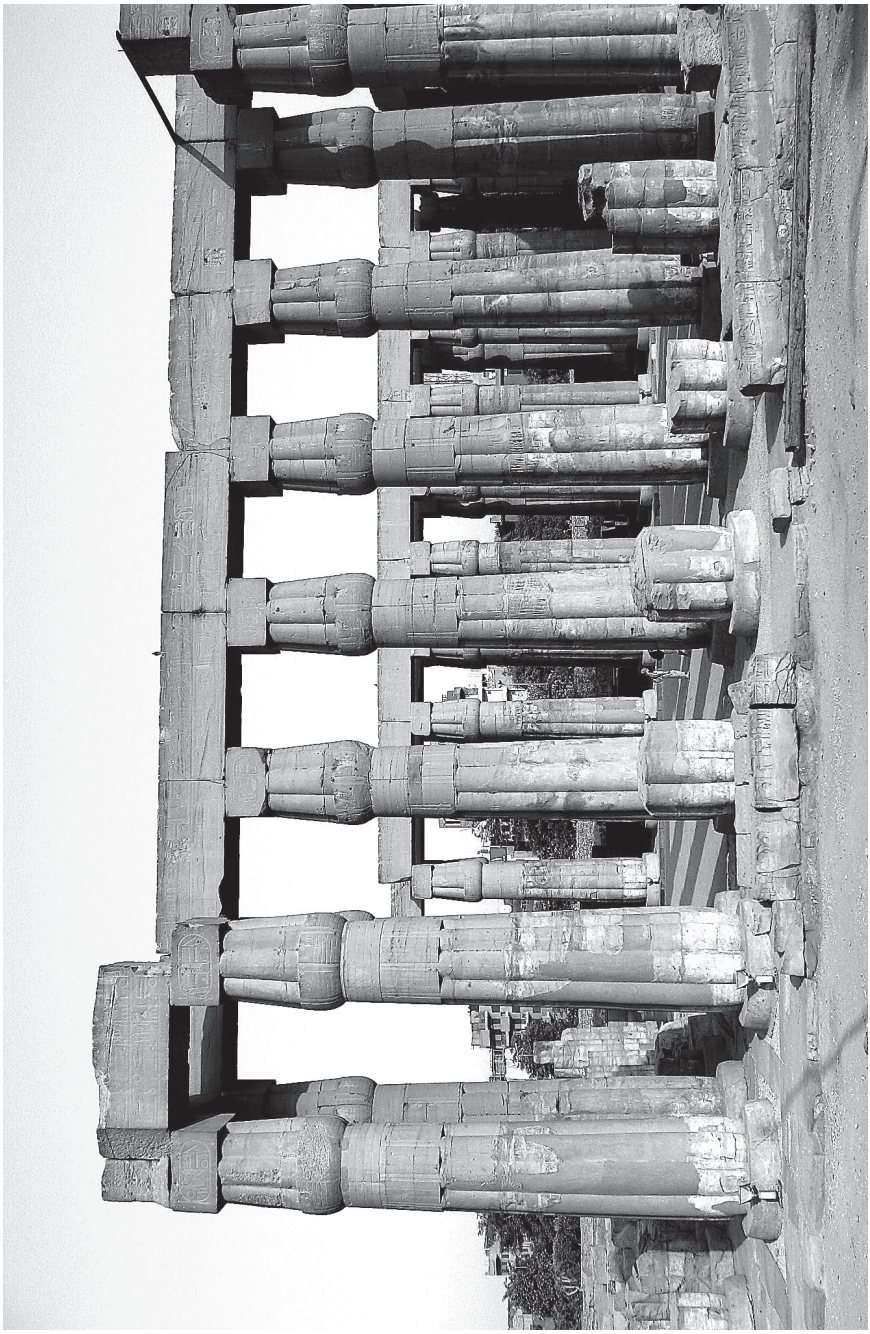
730. (above)
Repeated figures holding hands. Ismailabad, Rey. The Louvre.



731. (left)
Repeated design on a censer. Archaeological Museum, Istanbul.



732-733. Repeated columns. Notice the vertical lines on the columns and the equidistant spacing between the columns. Luxor, Egypt.



733.

734. Repeated features. Notice the use of vertical lines. Djoser complex, Saqqara, Egypt.

735. Repeated rectangles and snakes. Saqqara, Egypt.

736-737. Avenue of Sphinxes, Luxor Temple. Luxor, Egypt.



737.



738-739. Repeated carvings of prisoners. Karnak Temple Complex. Luxor, Egypt.





740. Repeated set of hieroglyphic symbols for "was specter," "ankh," and "djed column" over a "basket," possibly designating "all life, stability, and power." (See Richard H. Wilkinson, *Reading Egyptian Art*, Thames and Hudson, 1992.) Karnak Temple Complex, Luxor, Egypt.



741. Repetition of rearing cobras with solar disks. Thebes, Egypt.



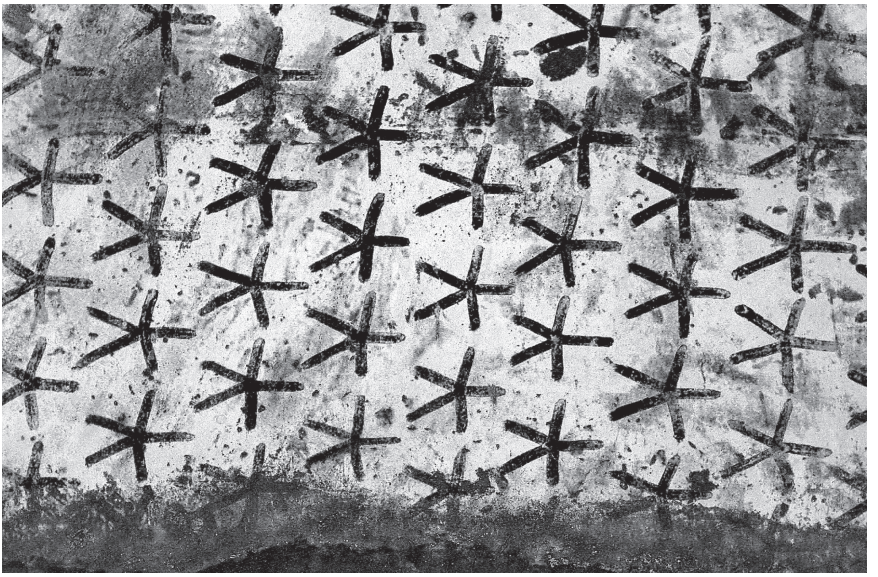
742. Repetition of Anubis, the jackal-headed god. Tomb of Inherkhau, Deir el-Medina. Thebes, Egypt.



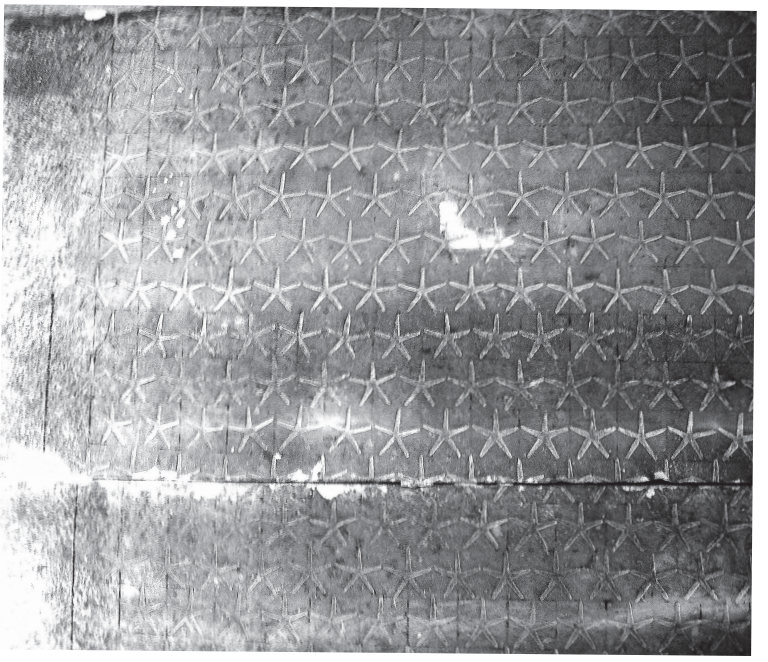
743. Duplicated hieroglyphics. Overhead in Karnak Temple Complex. Luxor, Egypt.



744. Repeated dancers. Saqqara, Egypt.



745-746.
Repeated stars on ceilings of temples in Karnak (above) and Saqqara (below). Egypt.

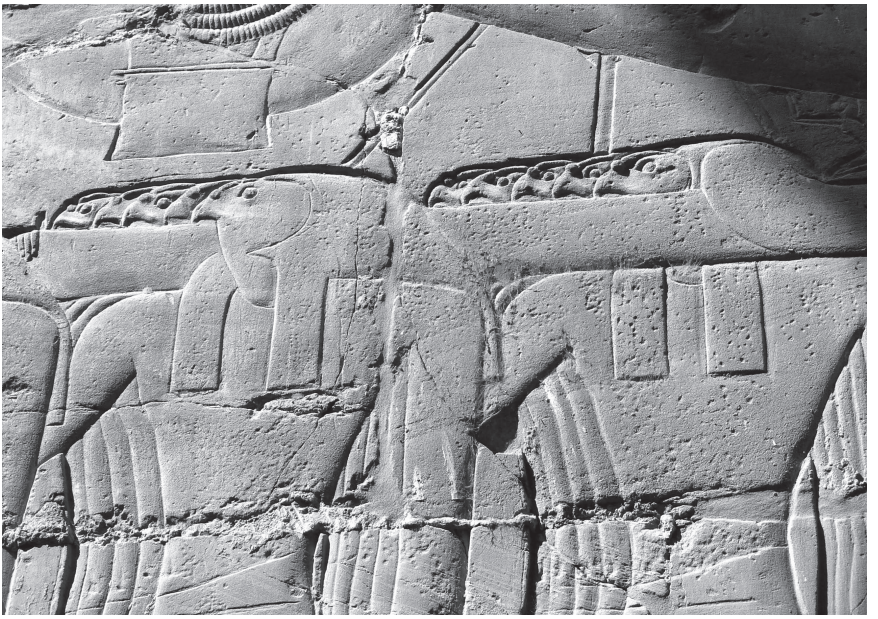




747. Repeated ankhs, a symbol for "life." Karnak Temple Complex, Luxor, Egypt.



748. Double crown of Amun. Karnak Temple Complex, Luxor, Egypt.



749-752. Multiple figures of Horus and Anubis (possibly representing lower and upper Egypt) carrying the sacred boat of Amun. Karnak Temple Complex, Luxor, Egypt.





751-752.





753. Repeated pitting of column. Karnak Temple Complex, Luxor, Egypt.



754. Repeated hieroglyphs. Cairo, Egypt.



755-757. Repeated figures and designs. Notice the horizontal and vertical designs at the lower edge and the use of limited symmetry at the end. Sarcophagus of Ramses III. 2nd millennium BC. The Louvre.



756.



757.



758. Ten people in the same seated position each breathing from a blue lotus. Chapel of General Imenyséneb. About 1800 BC. The Louvre.

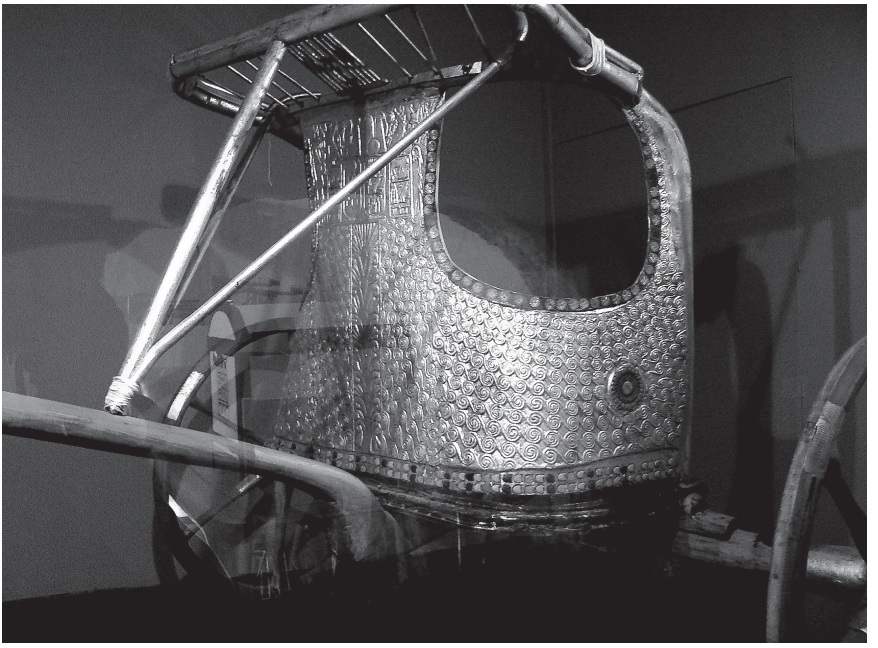


759-760. Repeated Hathor columns and snakes. Temple of Isis, Philae. Agilkia Island, Egypt.

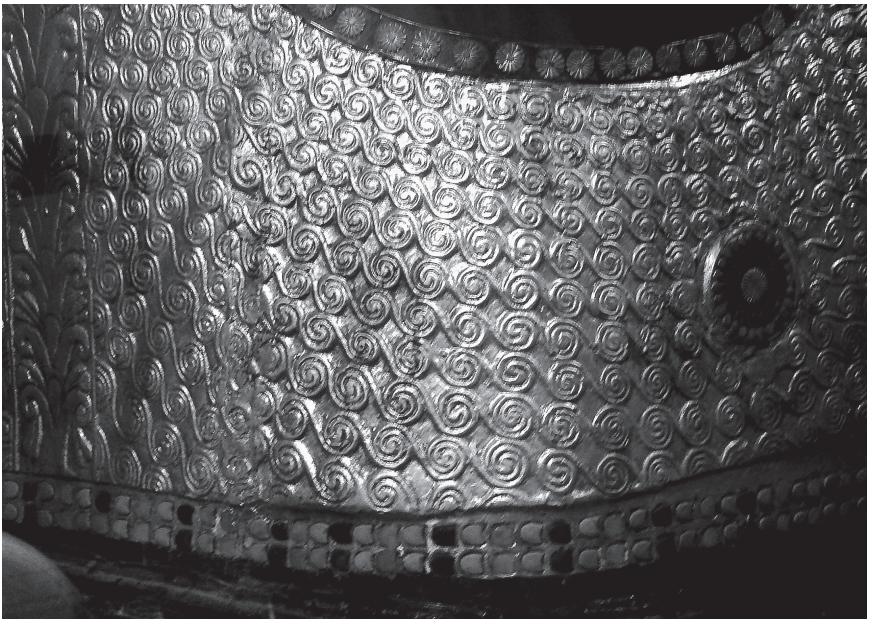


761-762. Repeated designs at the tops of columns. Philae, Agilkia Island, Egypt.

763-764. Repeated design of baboons around a column. 19th Dynasty. Nubian Museum, Aswan, Egypt.

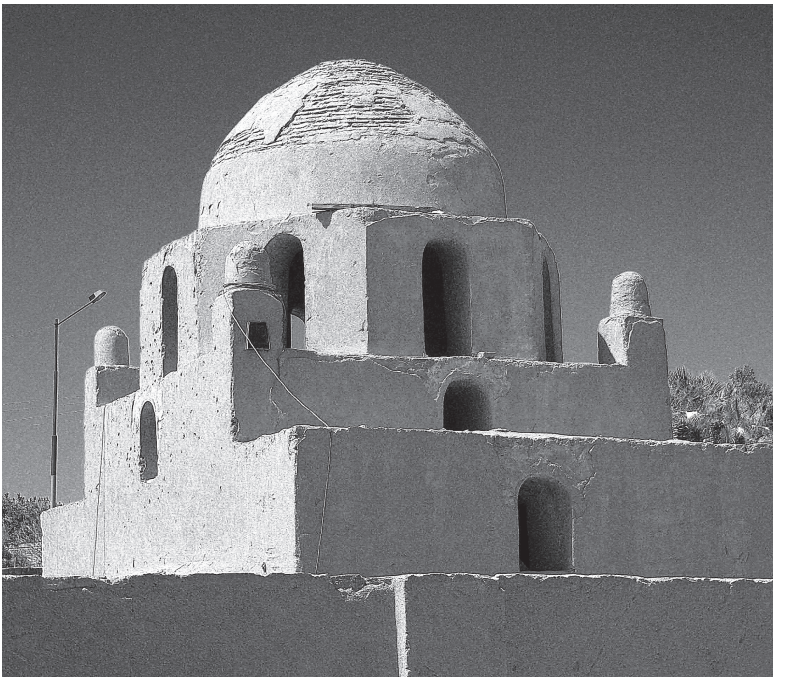


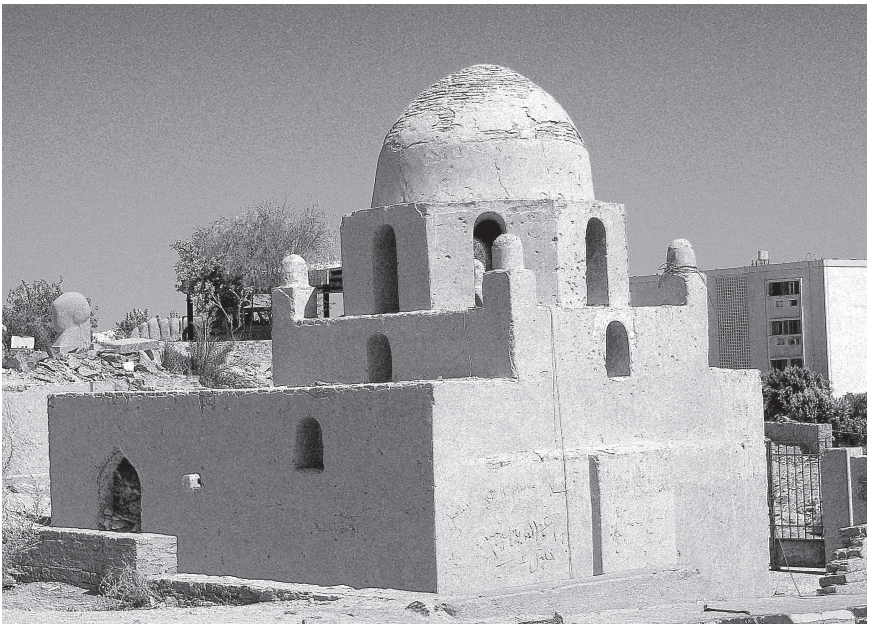
765-766. Repeated design on a replica of King Tutankhamen's chariot. Dr. Ragab's Pharaonic Village, Cairo, Egypt.



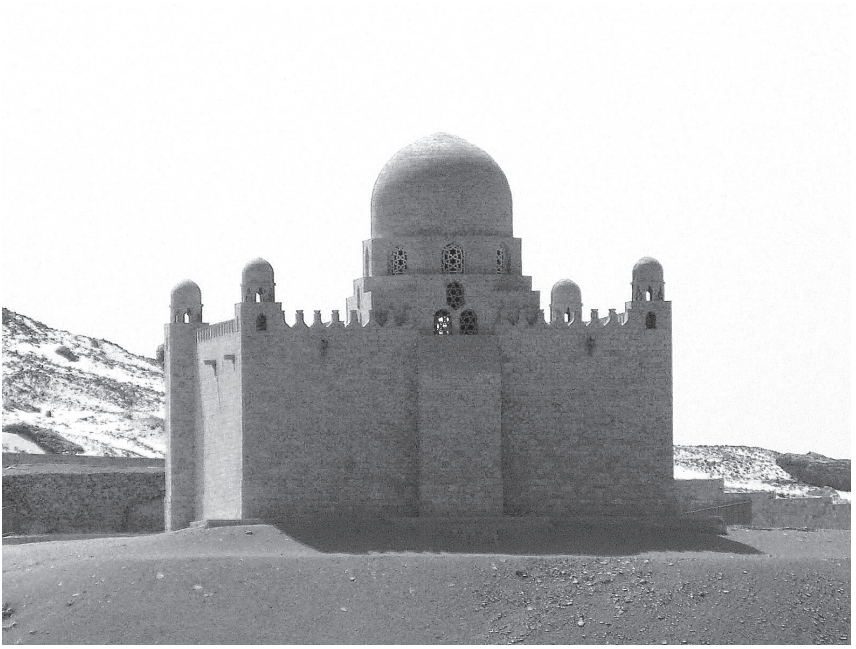


767. Repeated use of ears. Notice the use of symmetry. A request for the god Ptah to hear a person's prayers. 20th Dynasty. Memphis, Egypt. The British Museum.





768-769. Repeated features. Aswan, Egypt.



770. Repetition on the mausoleum of Aga Khan. Aswan, Egypt.



771. Repeated features. Tomb of Ismael Samani. Bukhara, Uzbekistan. M.D.



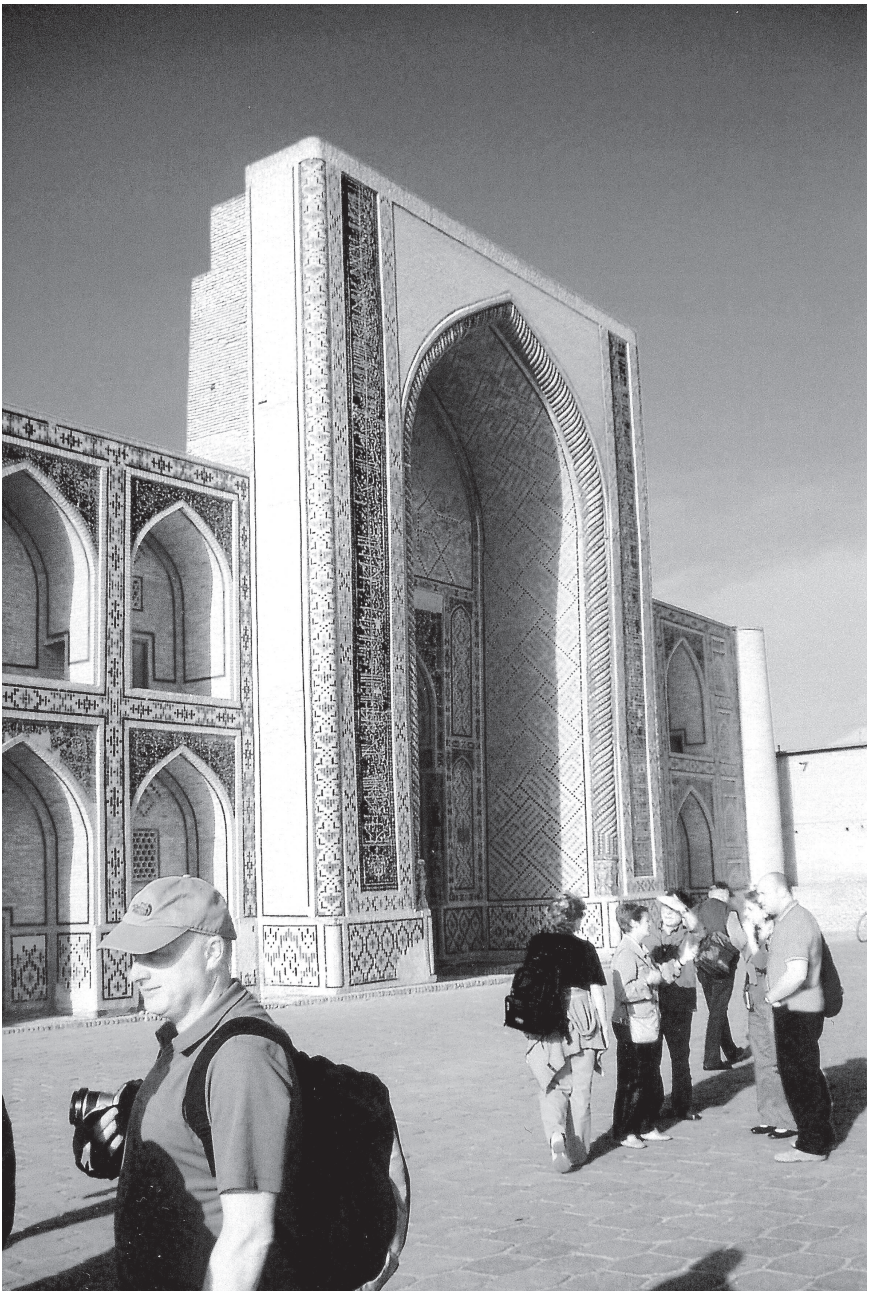
772. Repetition in the design of the Coptic Cathedral. Aswan, Egypt.



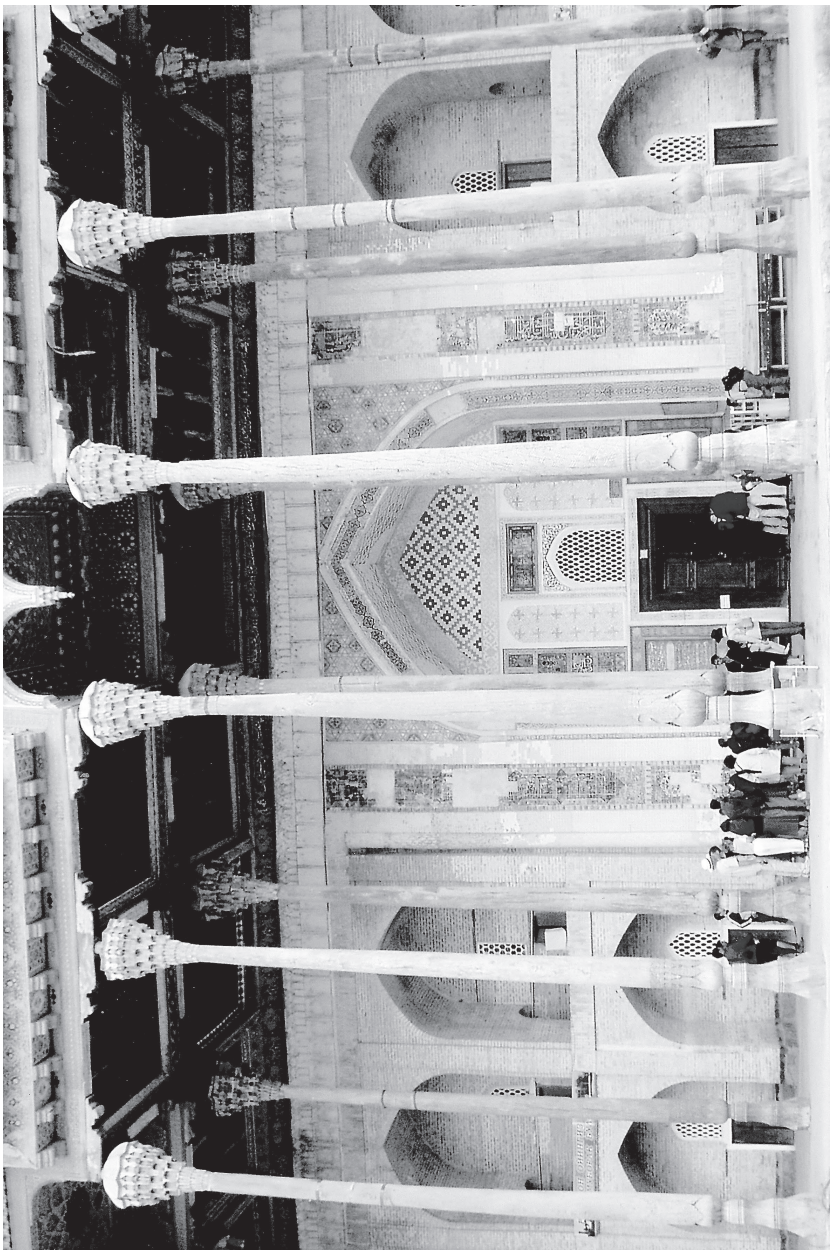
773. Repeated structures. Elephantine Island, Egypt.



774. Repeated features. Char-Minar Mosque. Bukhara, Uzbekistan. M.D.



775. Repeated features on Abdulla Khan Mosque. Bukhara, Uzbekistan. M.D.



776. Repeated features on Bala Hauz Mosque. Bukhara, Uzbekistan. M.D.



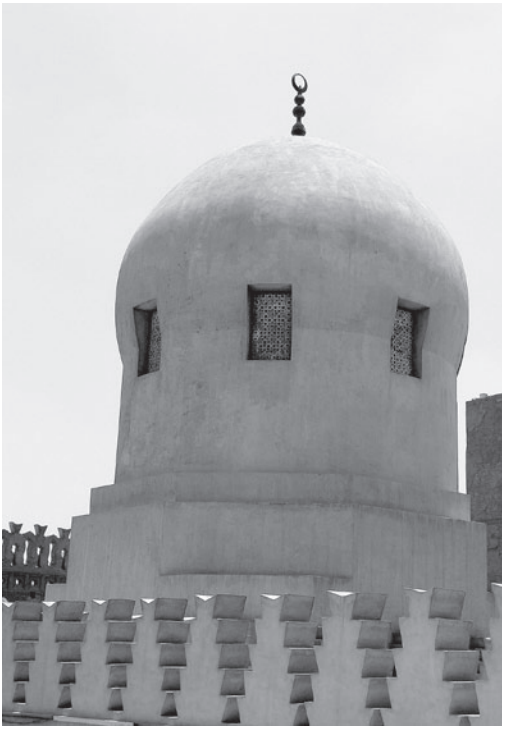
777. Repeated designs of arches, columns, and ceiling decorations. The Blue Mosque, Istanbul, Turkey.



778-783. Repeated features at Ahmed Ibn Tulun Mosque. Cairo, Egypt.



779.



780-781.



782-783.



784.
Repeated features on the ablutions fountain and the Sultan Ahmet Mosque. Istanbul, Turkey.

785.
Repeated features in the Istanbul Fountain at the Hagia Sophia Mosque. Istanbul, Turkey.



786. Repeated features on the German Fountain, Sultan Ahmet Mosque. Istanbul, Turkey.



787. Repeated designs on minarets. Nile Valley, Egypt.



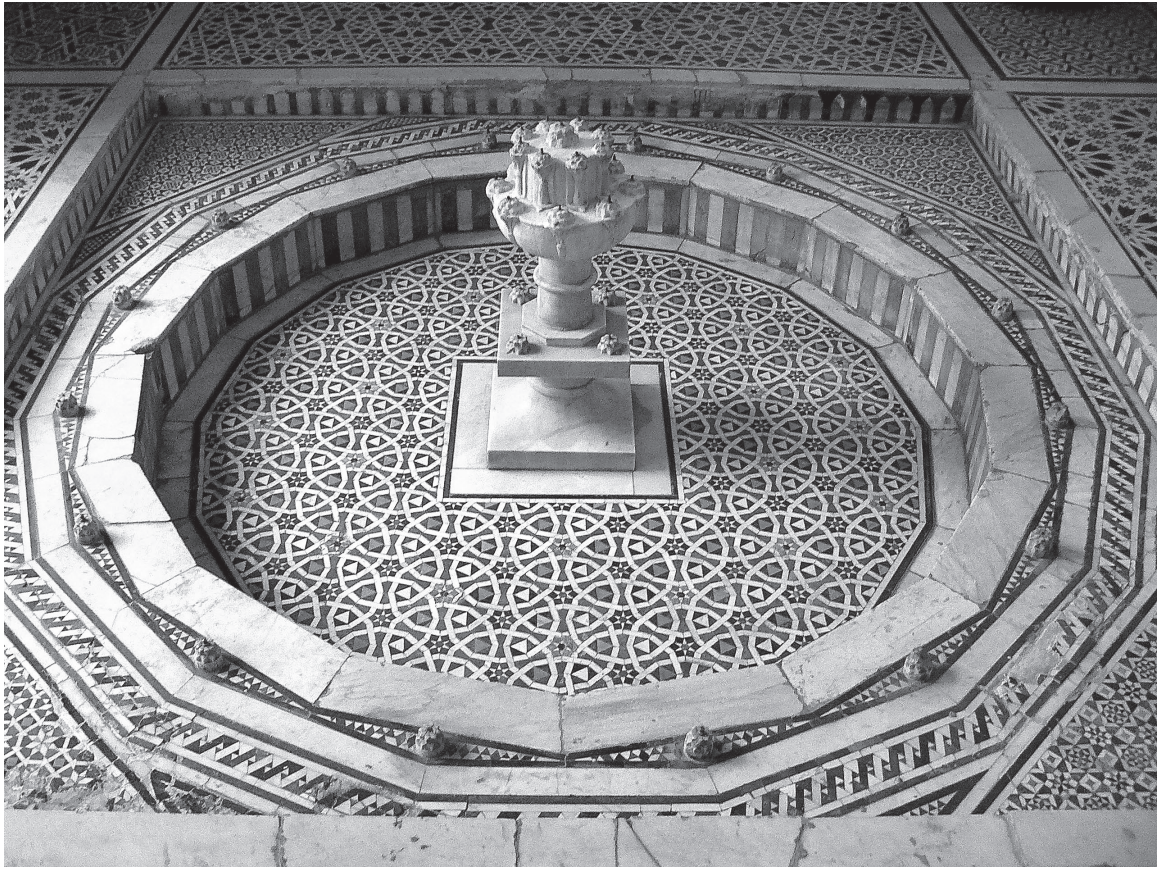
788-789.
Repeated features on a small mosque.
Nile Valley, Egypt.





790-791. Repeated scarab beetles on a circular fountain. Luxor, Egypt.



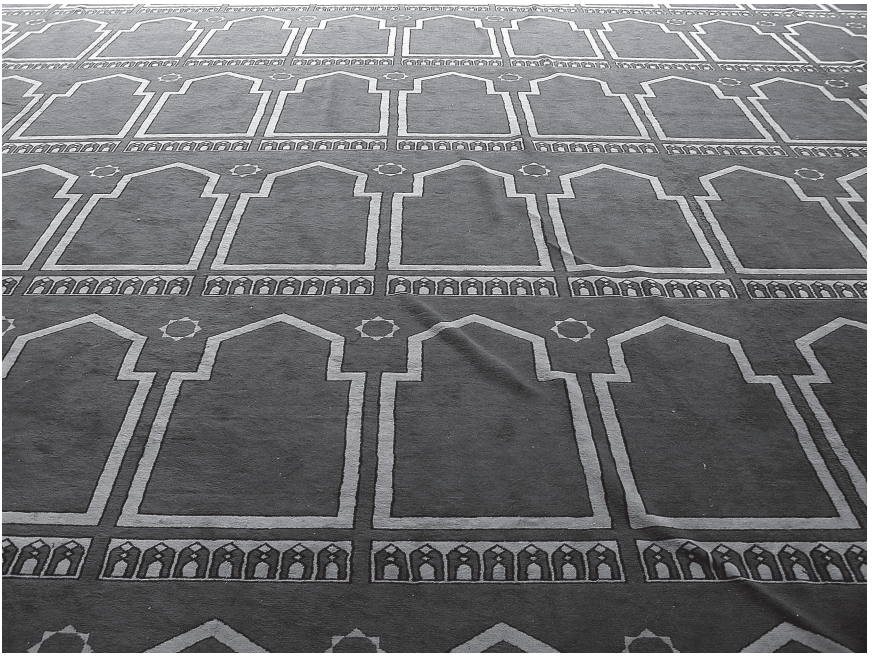


792.
Repeated designs on a fountain. Notice also the use of circles and rectangles. Gayer-Anderson Museum. Cairo, Egypt.

793.
Repeated domes and decorations. Waterfront shop. Luxor, Egypt.



794-795. Repeated prayer positions in mosques. Istanbul, Turkey.





796. Repeated designs painted on the outside of a house. Memphis, Egypt.



797-799.
Repeated designs on the outer walls of a building. Elephantine Island, Egypt.



798-799.





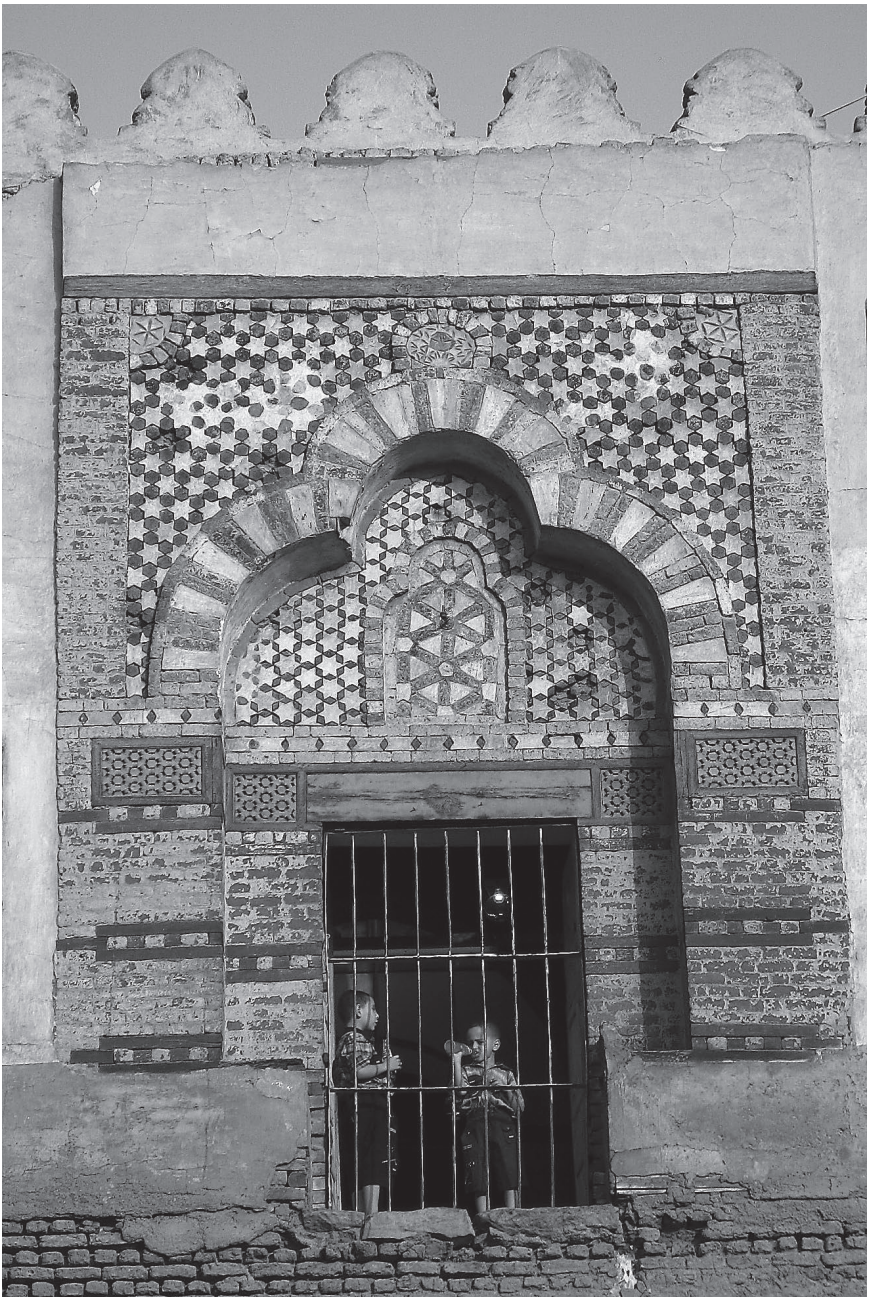
800-801. Repeated designs on buildings. Egypt.





802-803. Repeated features. Aswan, Egypt.



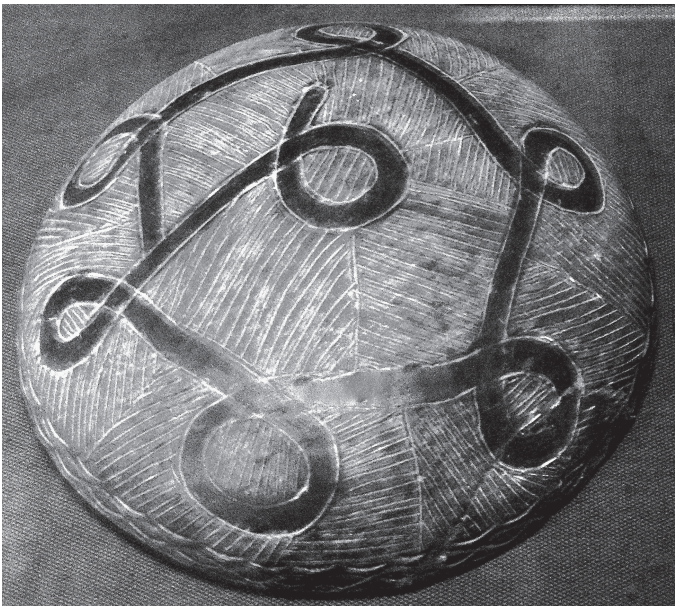


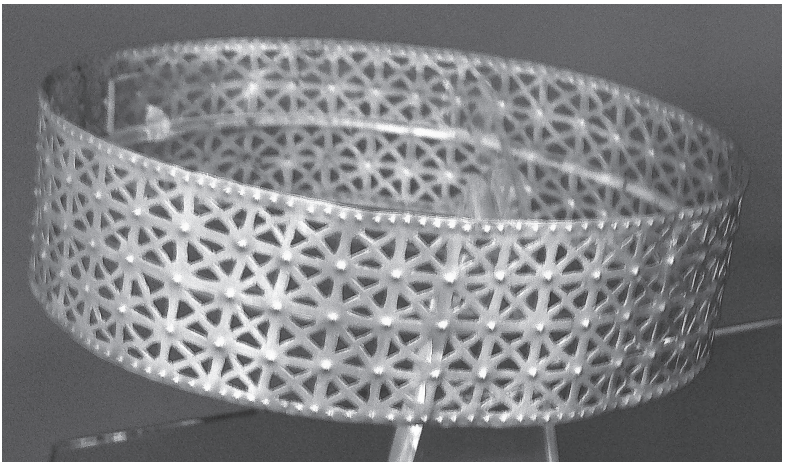
804. Symmetrical arrangement of repeated designs surrounding a window on an upper floor. Luxor, Egypt.

805-806. Repeated designs on doors. Elephantine Island, Egypt.



807-808. Repeated designs on bowls. 2000-1600 BC.
C-Group Culture. The Nubian Museum, Aswan, Egypt.





809. Repeated pattern on a circular gold diadem. 3rd millennium BC. Alacahöyük. Museum of Anatolian Civilizations, Ankara.



810. Repeated designs. 1400s BC. Reign of Thutmose III. Egypt. The Louvre.

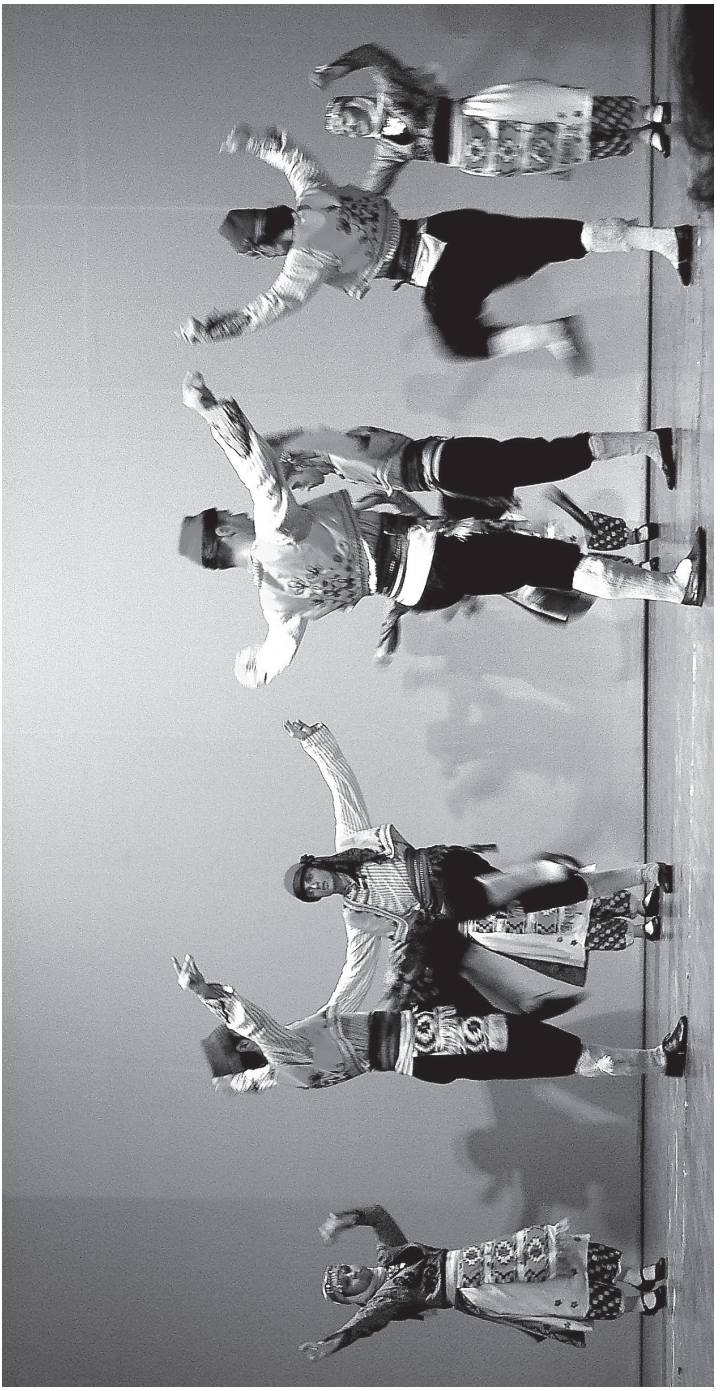
811.
Repeated windows and designs. Notice the use of circles, rectangles, and equidistant placement. Banque du Caire, Luxor, Egypt.



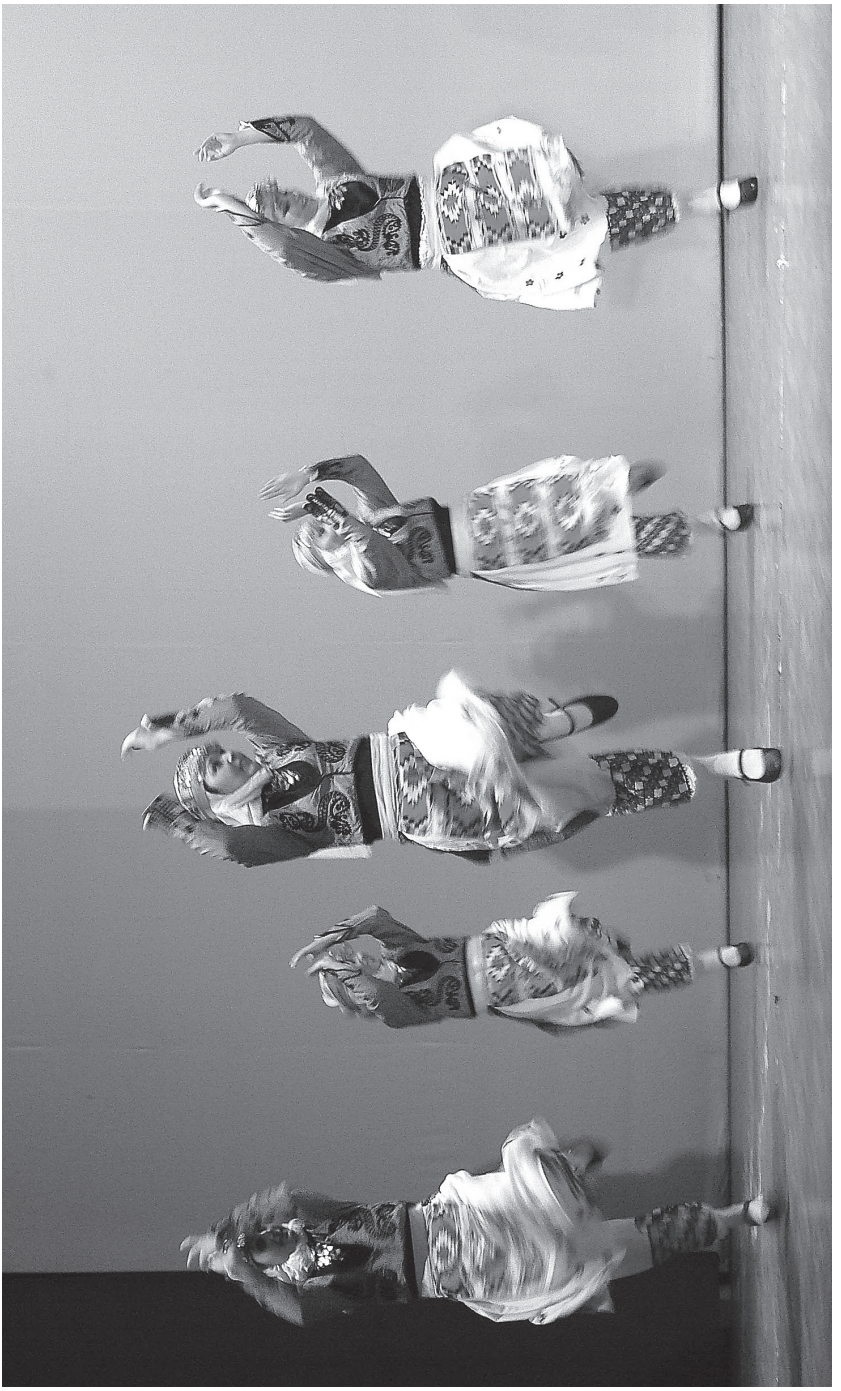
812. Repeated designs on a tour boat. Luxor, Egypt.



813-815. Dancers in identical clothing perform identical movements in a Turkish folk dance. Istanbul, Turkey.



814.



815.



816. Identical parking barriers. Istanbul, Turkey.

3.4. Europe

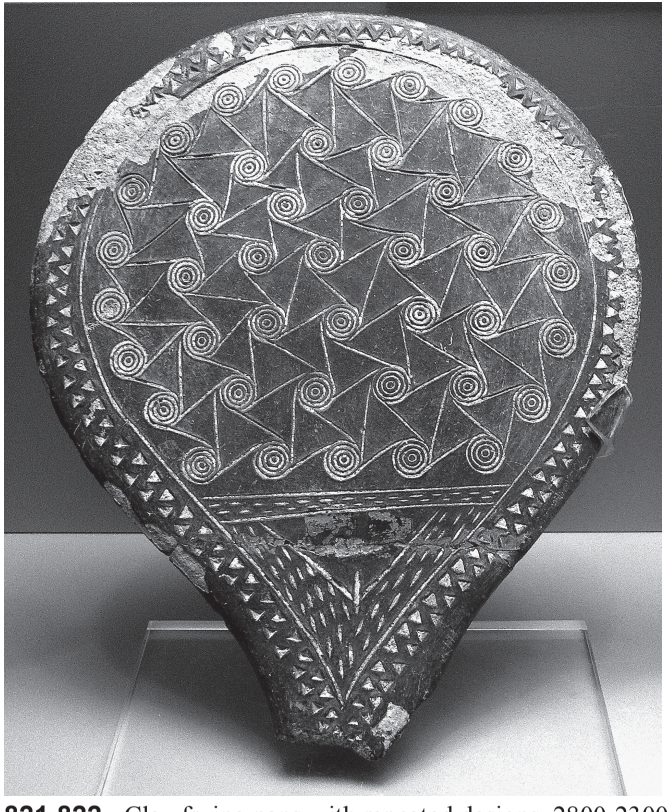
817.
Pebbles painted with repeated spots and lines. 9000 BC, France. The British Museum.



818-819. Repeated patterns. Notice the use of circles. 4th millennium BC. Bratislava bowls from Mikrothebes. Archaeological Museum of Volos. Volos, Greece.



820. Repeated designs on a vase. 5th millennium BC, Dimini. Archaeological Museum of Volos, Volos, Greece.

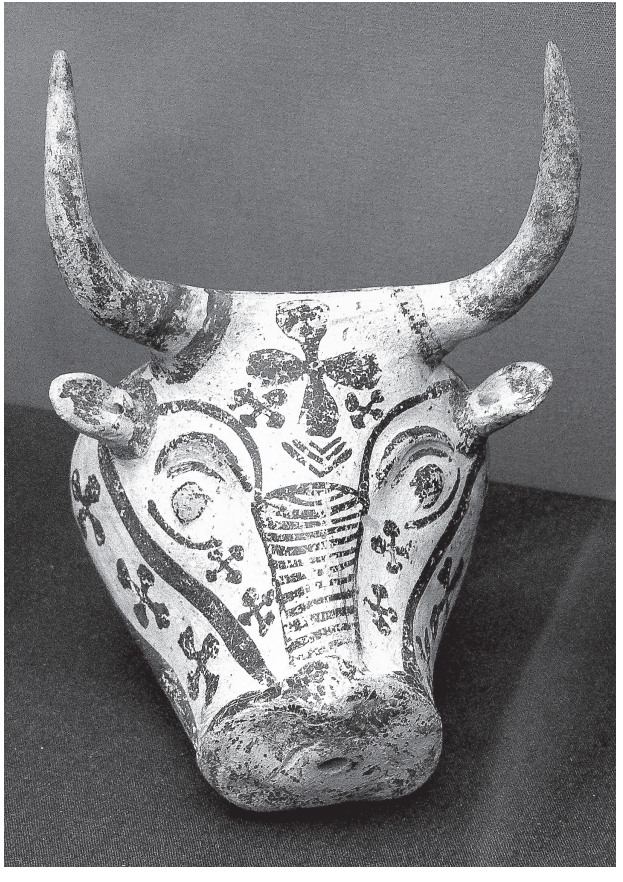




821-822. Clay frying pans with repeated designs. 2800-2300 BC. Cycladic period, Keros-Syros culture. National Archaeological Museum of Athens. Athens, Greece.



823. (above)
Repeated designs on a bull and a bird. 2nd millennium BC, Cyprus. The British Museum.



824. (right)
Repeated designs on the head of a bull. 1300 BC, Rhodes. The British Museum.



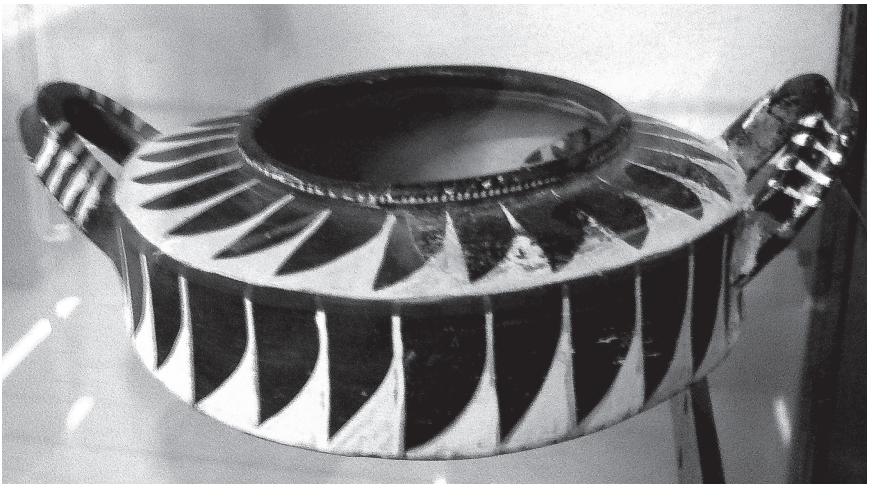
825. Repeated and symmetrical designs. 6th century BC. Sparta. The British Museum.



826.
Repeated dolphins, fish, and circular decorations. Palace of Knossos, Crete.



827. Repeated plants and decorations. Palace of Knossos, Crete.





828-829. Repeated designs. 19th-17th century BC. Kamares ware, Phaistos, Crete. Heraklion Archaeo-logical Museum.



830. Repeated design. Kamares, Crete. Heraklion Archaeological Museum.



831. Repeated designs. Arkades, Crete. Heraklion Archaeological Museum.

832-833. Repetition in Minoan jewelry. Heraklion Archaeological Museum, Crete.



834. Clay vase in the shape of a basket decorated with repeated double axes. Pseira, Crete. Heraklion Archaeological Museum.





835-836.
Repeated designs.
Heraklion Archaeological
Museum, Crete.



837. Repeated designs. Heraklion Archaeological Museum, Crete.



838. (left) Repeated designs. Heraklion Archaeological Museum, Crete.



839. (right) Vase constructed of rock crystal with repeated designs for the handle and neck decorations. Zakros Palace, Crete. Heraklion Archaeological Museum.



840. Helmet constructed of similarly sized pieces of tusks from boars. Palace of Knossos, Crete. Heraklion Archaeological Museum.



841.





843.

841-843. Repeated designs on a grave amphora. Notice the use of lines. Kerameikos Cemetery, 760-750 BC. Greek Archaeological Museum. Athens, Greece.

842.





844-845.
(above and left)
Repetition on an Attic krater. 750-735 BC. Greek Archaeological Museum, Athens, Greece.

846.
(top of opposite page)
Repeated designs. Notice the use of rectangles. Exaleiptron, 575-559 BC. Greek Archaeological Museum, Athens, Greece.

847.
(bottom of opposite page)
Repeated designs on a bowl. 6th century BC. Greek Archaeological Museum, Athens, Greece.



846.



847.

848-849.
Boeotian vases with repeated designs. Notice the use of circular lines. 6th century BC. Greek Archaeological Museum.



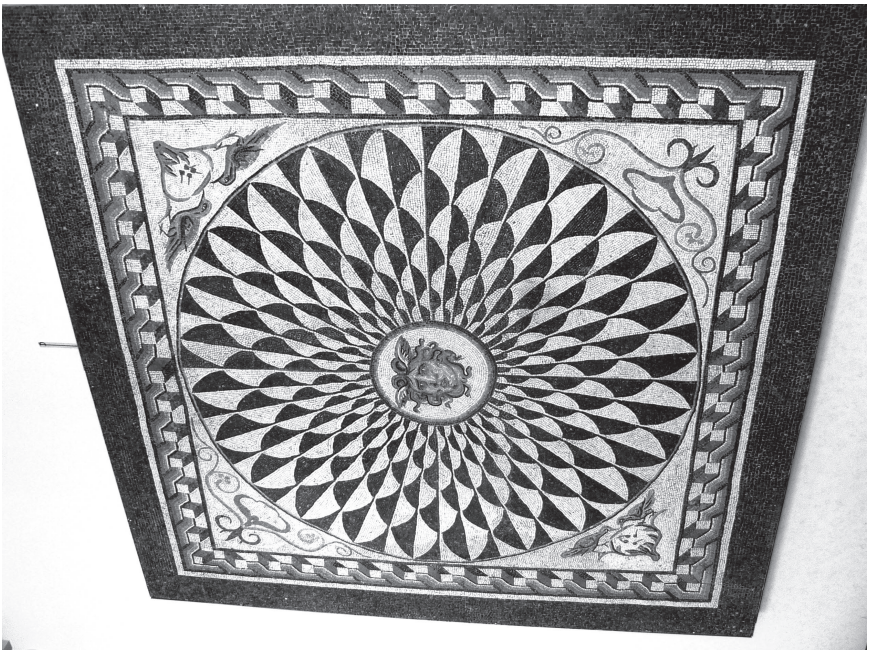
850. Repeated warrior(s). 7th century BC. Cyprus. The British Museum.

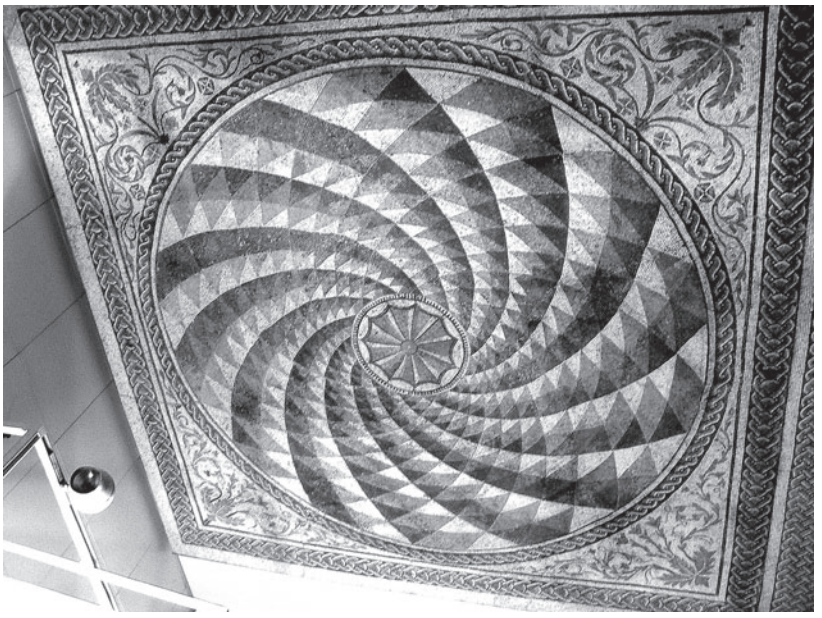


851-852.
Repeated features on a tomb monument with griffins and acanthus leaves. About 350 BC. Greek Archaeological Museum, Athens, Greece.



853.
Repeated features.
Colosseum, Rome,
Italy.





854–855. Repeated designs on Roman mosaics. Naples Archaeological Museum. Naples, Italy.

856. Repeated designs are alternated on the walls. Pompeii, Italy.



857.



857-859. Repeated mosaic designs. Notice the use of rectangles. Pompeii, Italy.

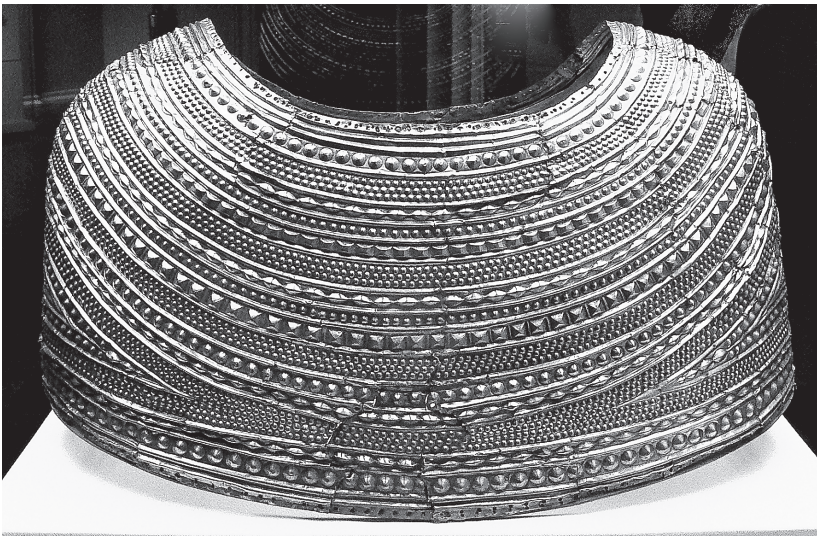




860. Repeated features on a statue of Artemis. Notice the symmetrical position of her hands. 2nd century AD. Naples Archaeological Museum.



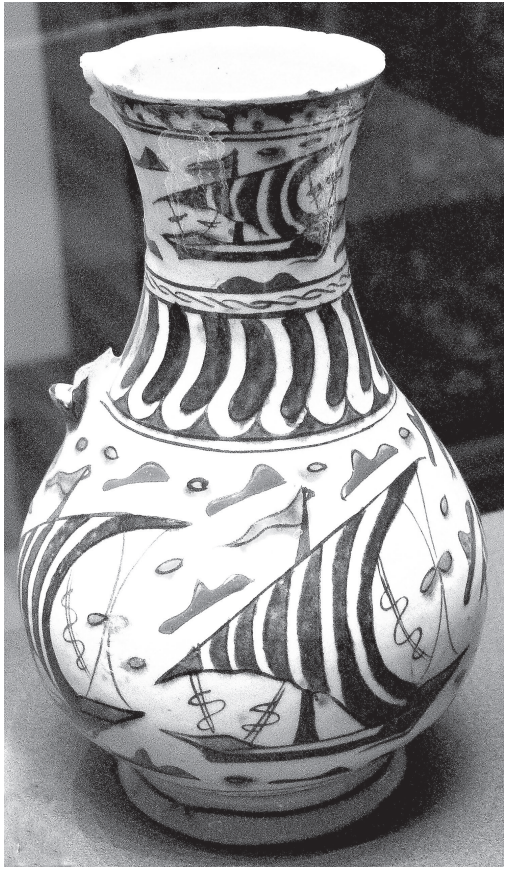
861. Repeated features on an urn. 1900-1500 BC. Northumberland, England. The British Museum.



862. Golden cape with repeated designs. 2nd millennium BC, Wales. The British Museum.



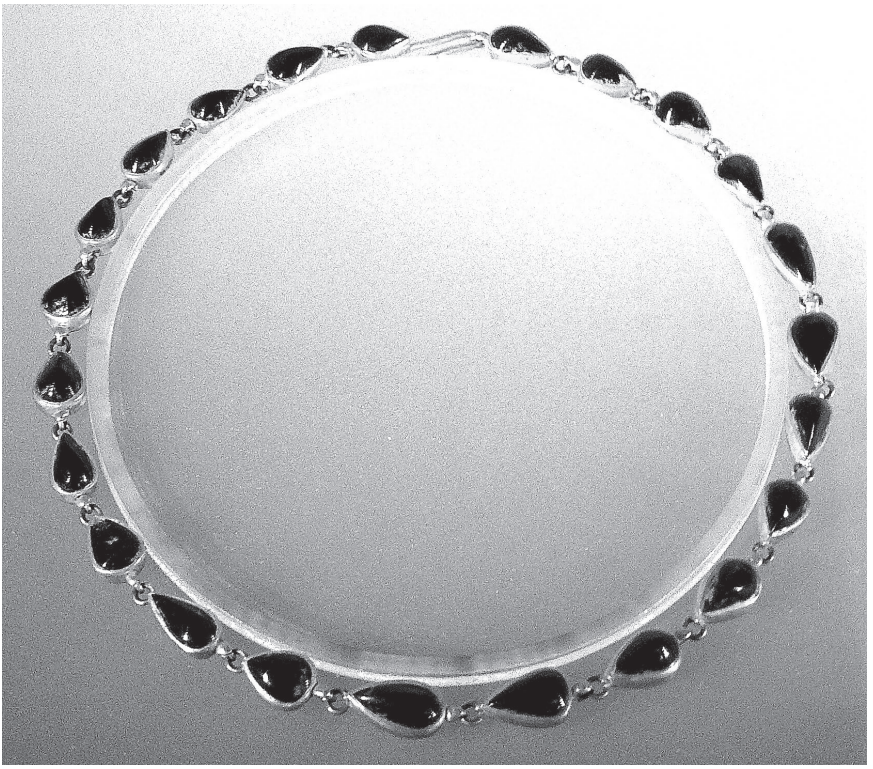
863. (left)
Lamp with repeated designs. Notice the use of circles.
4th-6th century AD, Odessos area.
Varna Archaeological Museum, Varna, Bulgaria.



864. (right)
Repeated designs.
16th century, Rhodes.
The Louvre.



865. Repeated features. Notice the use of circles. Late 1400s - early 1500s AD. Florence, Italy. The Royal Ontario Museum, Toronto, Canada.



866. Necklace with repeated gold and garnet designs. Notice the circular display. Vetralla. Naples Archaeological Museum.



867. Repeated design of a goddess flanked by lions. 660-620 BC, Rhodes. Notice the symmetry on each plaque. The British Museum.



868. Repeated features on domes. Notice the use of circles. Rome, Italy.



869. Repeated features on domes. Italy. H.S.



870-871. Repeated features inside a dome. Notice the use of circles and symmetry. The Vatican, Rome, Italy. H.S.



872. (left) Repeated crenels along the top of a castle wall. H.S.

873. (right) Repeated features on the Dormition of the Mother of God Cathedral, Varna, Bulgaria.





874-875. Repeated features on towers. Luzern, Switzerland.



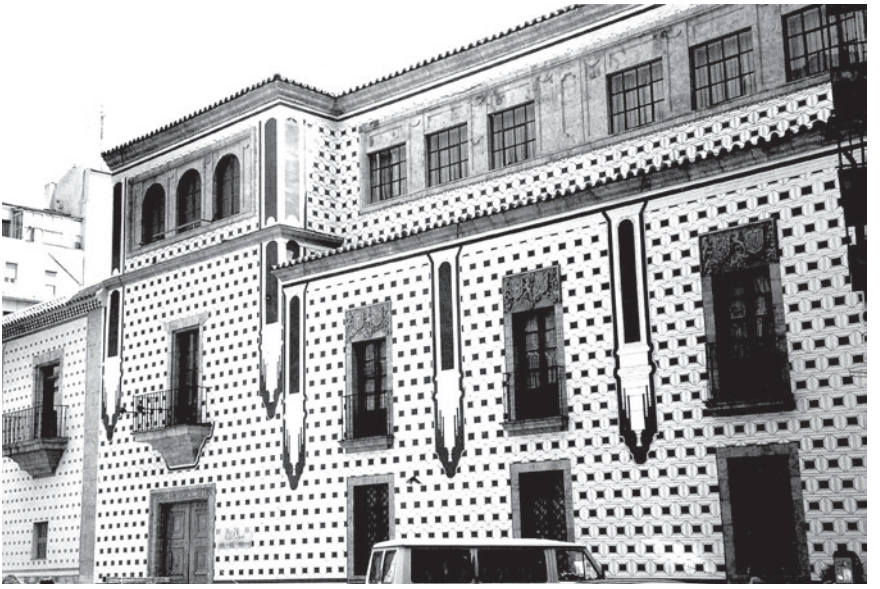
876. Repeated features on the individual domes of St. Basil's Cathedral. Moscow, Russia. L.W.



877. Repeated domes and crosses. Assumption Cathedral, Moscow, Russia. L.W.



878-879. Repeated designs on the outer wall of buildings. Salamanca, Spain.



880. (left) Repeated design on the outer wall of a building. Salamanca, Spain.

881. (right) Repeated design on a wall. Milies, Greece.



882. Repeated features. Venetian Arsenal. Heraklion, Crete.



883. (above) Repeated designs. Luzern, Switzerland.



884. (left) Repeated features in the pavilion in the Castle Park, Enghien, Belgium. H.H.



885. Repeated symmetrical designs on the Eiffel Tower. Paris, France.



886. Repeated design in a bathroom wall of a hotel room. Notice the symmetrical frame around the designs. Paris, France.

887. (left) Repeated sea horse and shell designs on a water fountain. Varna, Bulgaria.

888. (right) Repeated metal designs on a window. Salamanca, Spain.



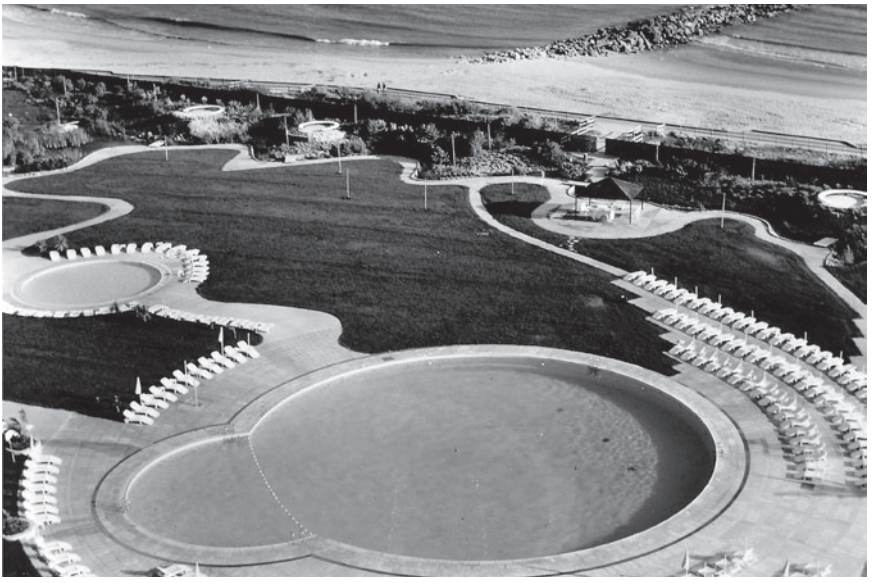
889. Repeated metal designs on a fence. Notice the use of symmetry. Salamanca, Spain.



890. Repeated designs on a circular fountain. Luzern, Switzerland.



891. Repeated design of balconies on a hotel. Torremolinos, Spain. H.S.



892. Repeated pool chairs. Notice the circular pools. Algarve Peninsula, Portugal. H.S.



893-894. Repeated features. Notice the use of rectangles. EUR, Rome, Italy.



894.



895. Repeated design in the Palace of Civilization, EUR. Rome, Italy.



896.
Greek soldiers performing identical movements at the Tomb of the Unknown Soldier in front of the Parliament Building. Athens, Greece.

897.



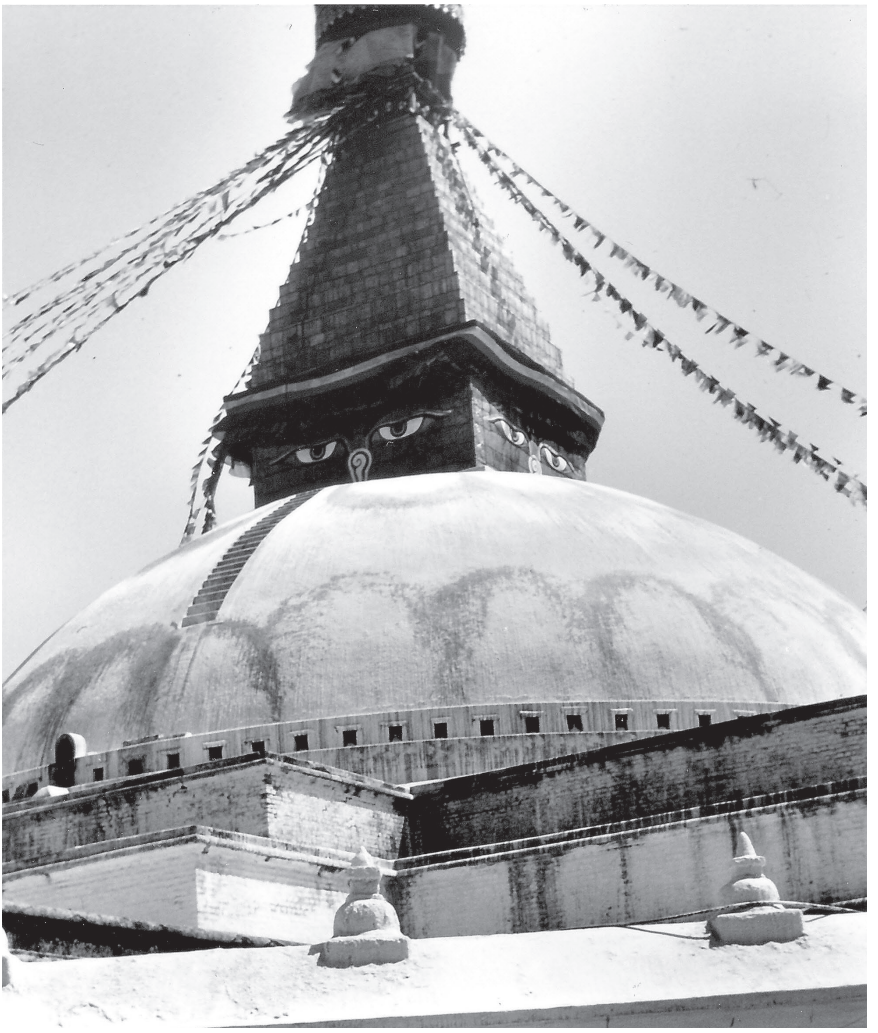
897-898. Repeated designs on clothing. Italy. H.S.



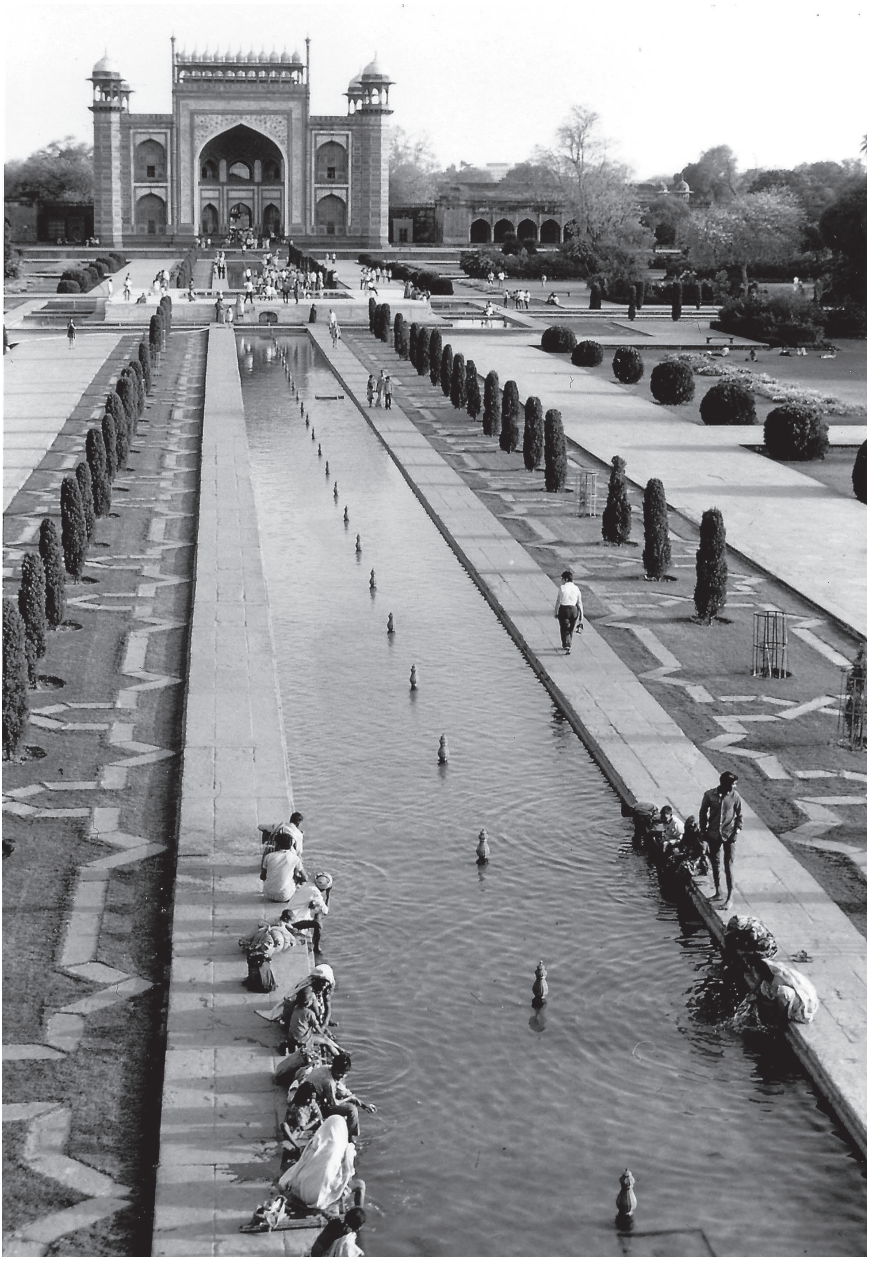
899. People striking together. Athens, Greece.

3.5. South Asia

900. Repeated mounds of straw. Notice the rectangular shape of the buildings. Near Leh, Ladakh. C.H.



901. Repeated features on Boudhanath Buddhist Temple. Kathmandu, Nepal. H.S.



902. Repeated plants, designs, and fountains along the pool of water. Notice the parallel, perpendicular, and equidistant arrangements. Taj Mahal, Agra, India. H.S.



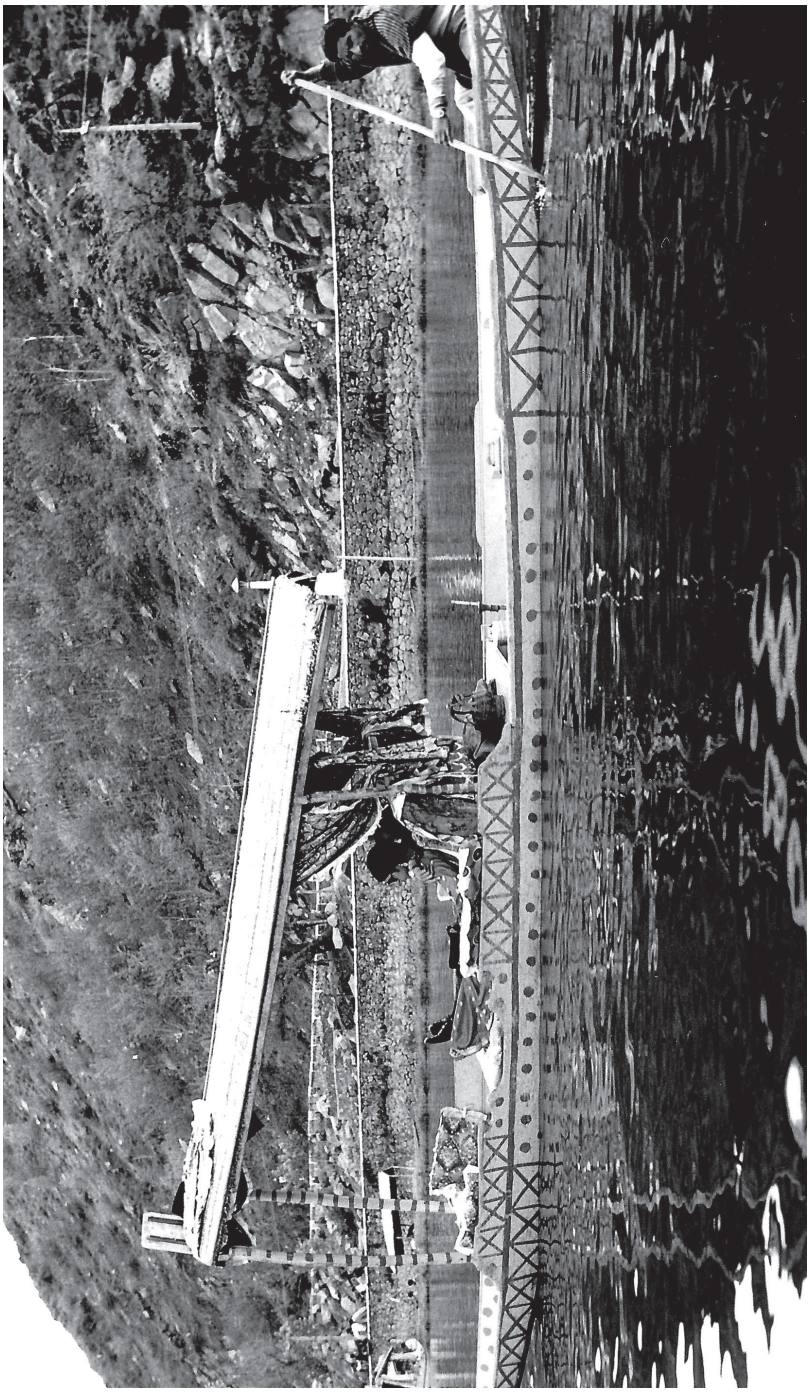
903. Repeated and symmetrical features on the demon, Ravana. 18th century AD. India. The British Museum.



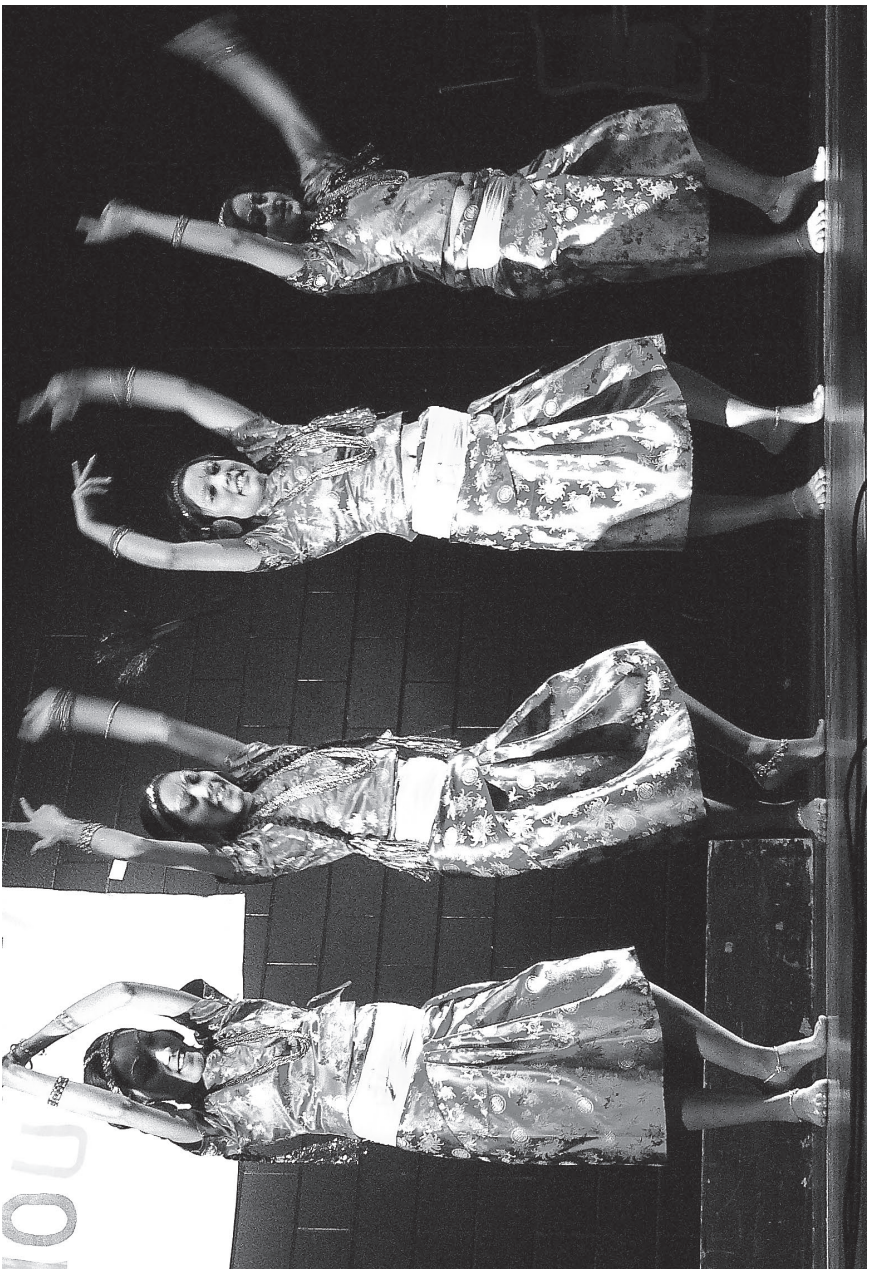
904. Repeated figures. South India. Museum of Anthropology, Vancouver, British Columbia.



905. Repeated designs on houseboats. Lake Dal, Srinagar, Kashmir. H.S.



906. Repeated designs on a water taxi. Lake Dal, Srinagar, Kashmir. H.S.



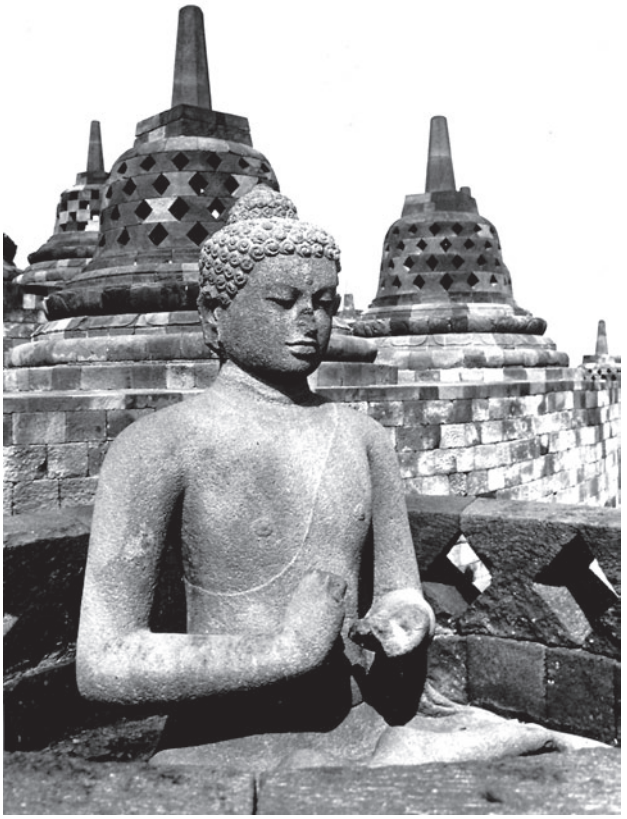
907.

907-908. Dancers from Bhutan wearing identical clothing and performing identical movements. Charlottetown, PEI.



909. Repeated designs. 18th century, Deccan, India. The Louvre.

3.6. Southeast Asia



910. (left) Repetition of stupas. Borobudur, Java, Indonesia. C.H.

911. (below) Row of repeated statues of Buddha. Ayutthaya, Thailand.



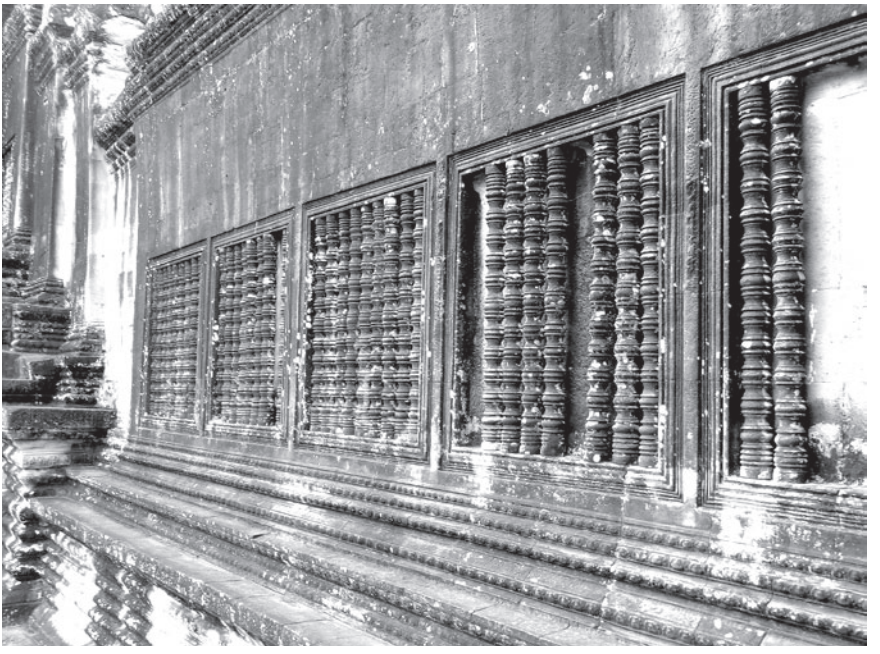


912. Repeated demons. 15th century AD. Burma. The British Museum.

913. Repeated faces. Angkor Wat, Cambodia. E.T.



914. Repeated faces. Angkor Wat, Cambodia. E.T.



915. Repetition in the decoration of a wall. Angkor Wat, Cambodia. E.T.



916. Repeated figures in a sculpture at the Leper King Terrace. Angkor Wat, Cambodia. E.T.



917. Repeated faces of Brahma. 9th-10th century, Cambodia. Guimet Museum, Paris, France.



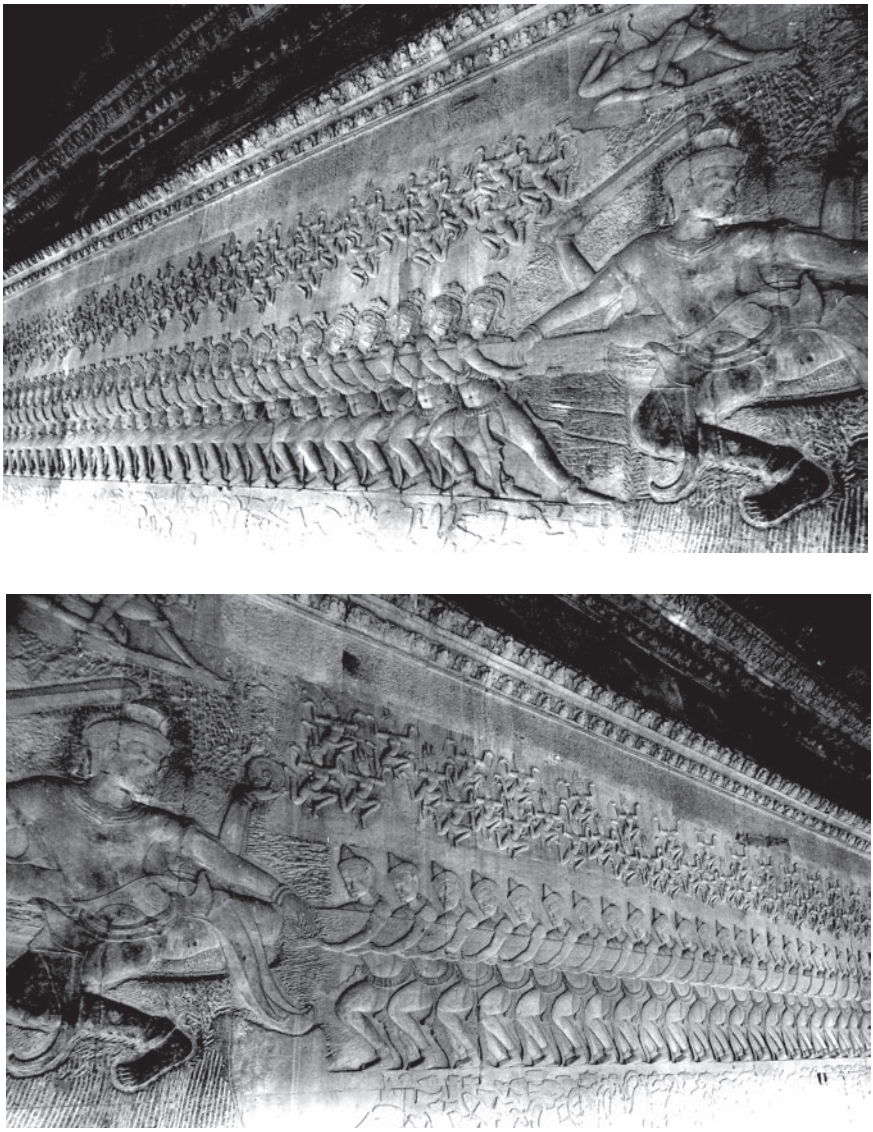
918. Repeated Buddhist figures. 12th-13th century. Pagan, Burma. The British Museum.



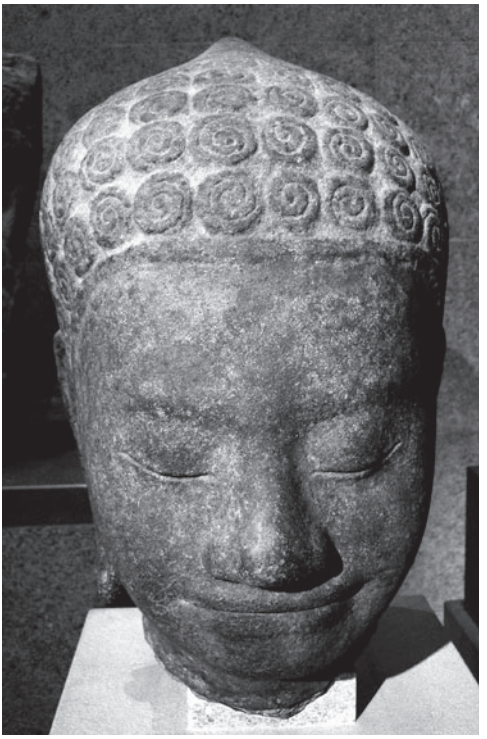
919. Repeated design symmetrically arranged. Garuda masters the Naga. 9th century, Angkor, Cambodia. Guimet Museum, Paris, France.



920.



920-922. Repetition of figures in the sculpture of the Churning of the Sea of Milk. Angkor Wat, Cambodia. E.T.



923. (left)
Repeated design on the head of Buddha. 12th-13th century AD, Cambodia. Guimet Museum, Paris, France.

924. (below)
Repeated columns. Angkor Wat, Cambodia. M.D.





925. Repeated temple features and decorations. Bangkok, Thailand. H.S.

926. Repeated structures and features. Wat Arun Temple, Bangkok, Thailand. H.S.

927.
Repeated chedis (stupas), Wat Pho Temple. Bangkok, Thailand. H.S.



928.
Model of a temple surrounded by multiple elephants, all facing outwards. Notice the use of rectangles. Thailand. H.S.

929.
Repeated horizontal and vertical designs in a Cambodian temple. Can Tho, Vietnam.



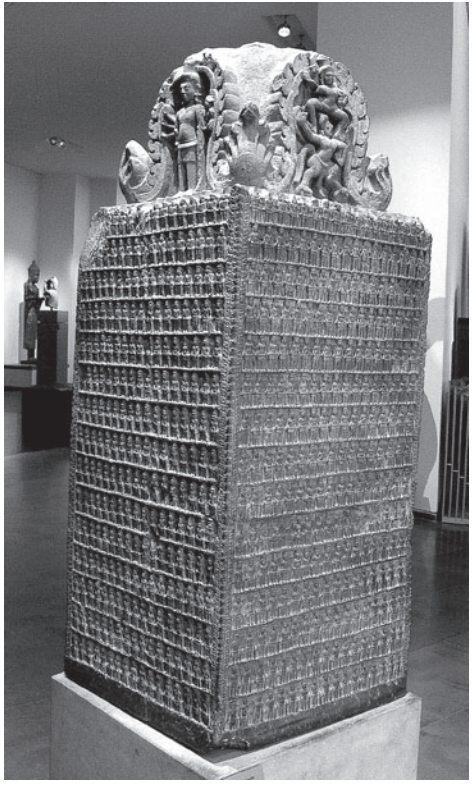
930. Repeated designs on temple columns and on the statue of a demon. Wat Phra Kaew (Temple of the Emerald Buddha), Bangkok, Thailand. H.S.





931. (above) Repeated designs on a circular structure at the entrance to a Cambodian temple. Notice the central placement of the lotus and the symmetrical placement of statues behind it. Can Tho, Vietnam.

932. (left) Repeated floor decorations and religious objects in a Cambodian temple. Can Tho, Vietnam.





933-934. Repeated figures surrounding a sandstone monument to Vishnu. 12th century AD, Cambodia. Guimet Museum, Paris, France.



935-936. Repeated figures in a Buddhist temple.
An Giang region, Vietnam.



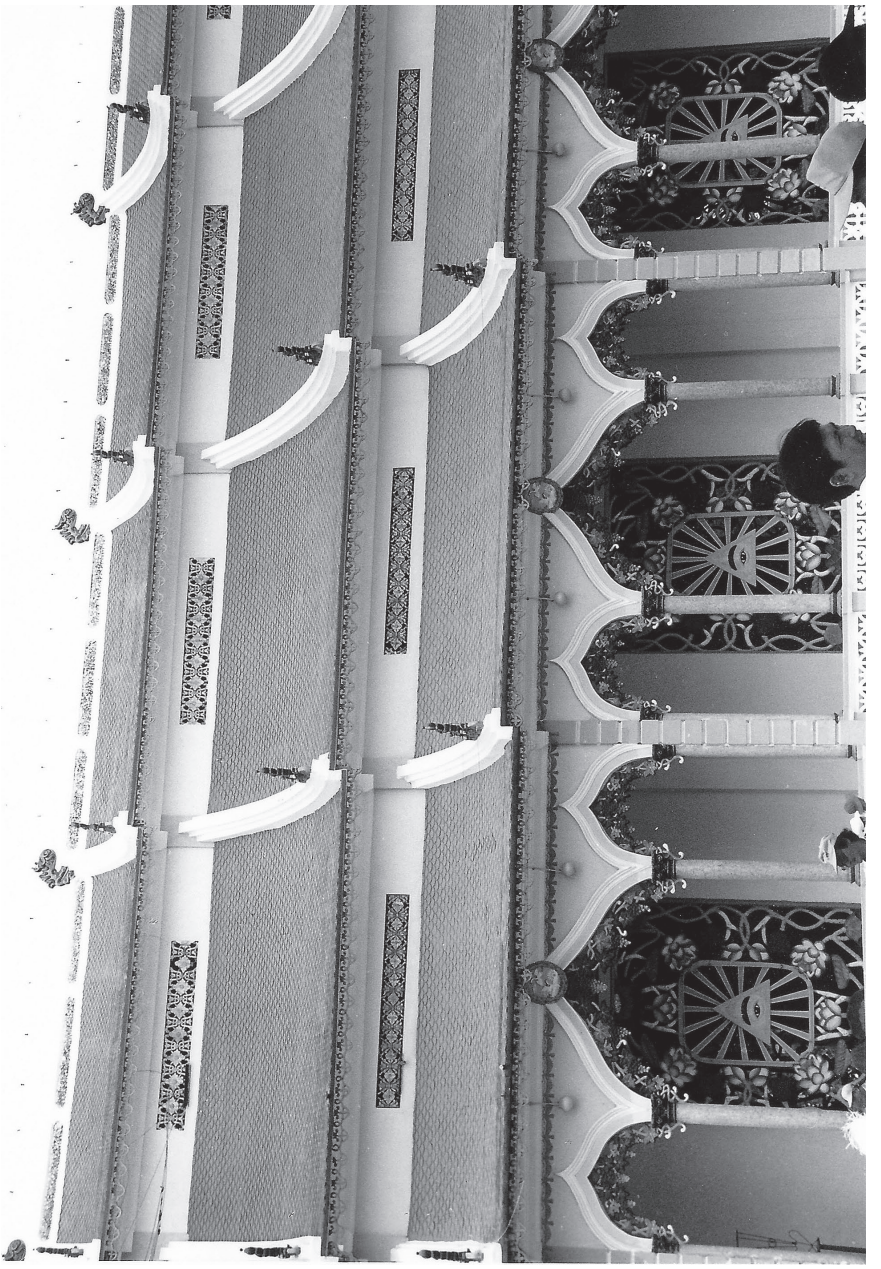




937.
Repeated statues of Buddha in a Vietnamese temple.

938.
Repeated floor design in a Buddhist temple. Vietnam.

939. Production of identical statues. Southeast Asia. M.D.



940.

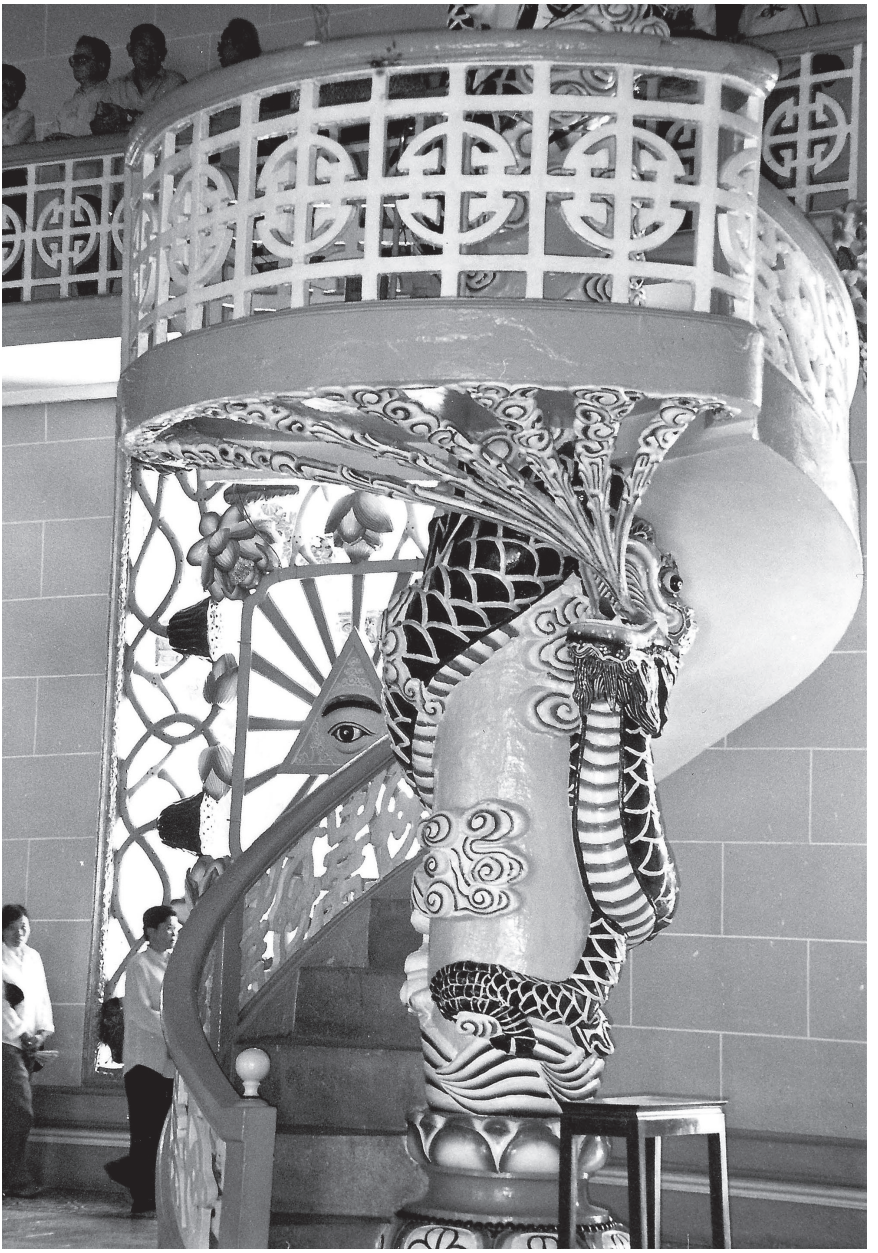
941.

940-944.
Repeated features.
Cao Dai Temple.
Tay Ninh, Vietnam.
H.H.

942.



943.



944.



945. Repeated statues in Linh An Temple. Dalat, Vietnam. E.T.



946. Repeated features at a hospital. Can Tho, Vietnam.



947. Repeated features on a building. Notice the use of rectangles, centering, and symmetry. Vietnam.



948-949. Repeated features on houses. Notice the rectangular shrine in the front yard of each house. Vietnam.





950. Repeated design on the guardrail of a bridge. Singapore. H.S.



951. Repeated topiary. Vietnam.





952-953.
Repetition of rubber trees on a rubber plantation. Vietnam. E.T.

954. (left)
Repeated features.
Vietnam.

955. (above)
Repeated sculptures and lanterns at Phu Quoc Lighthouse. Vietnam. E.T.

956-958.
Lighting incense sticks and using identical gestures at a Buddhist funeral. Vietnam.



957.



958.



959. Sculptured lotus repeated at each corner of a grave. Notice the rectangular shape of the grave. Vietnam.



960. Identical design of grave houses in a cemetery. Vietnam. E.T.



961-962.
Identical uniforms worn by Buddhist funeral performers. Vietnam.



963. (left) Repeated design on clothing. Vietnam. H.H.

964. (right) Students wearing the same school uniform and using the same arm positions. Vietnam. E.T.



965.
Identical uniforms worn by school children. Those in the far background are doing identical exercises with neckerchiefs. Vietnam.

966.
Four workers all placing a peanut in the center of each cookie at a cookie factory. See above a circular container of identical cookies that is sold by this factory. Vietnam.



967.
Identical vats for fish sauce.
Phu Quoc Island, Vietnam. E.T.



968-969. Philippine singers wearing identical clothing and using identical gestures. Bangkok, Thailand. H.S.



3.7. East Asia



970. Repeated features on a temple. Notice the symmetrical design. Todaiji Temple, Nara, Japan. E.T.



971. Repeated features. Himeji Castle. Himeji, Japan. E.T.



972. Temple interior with repeated design. Notice the rectangular panels. Kyoto, Japan. E.T.



973. Repeated design of the barrier at water's edge. Summer Palace, Beijing, China. H.S.

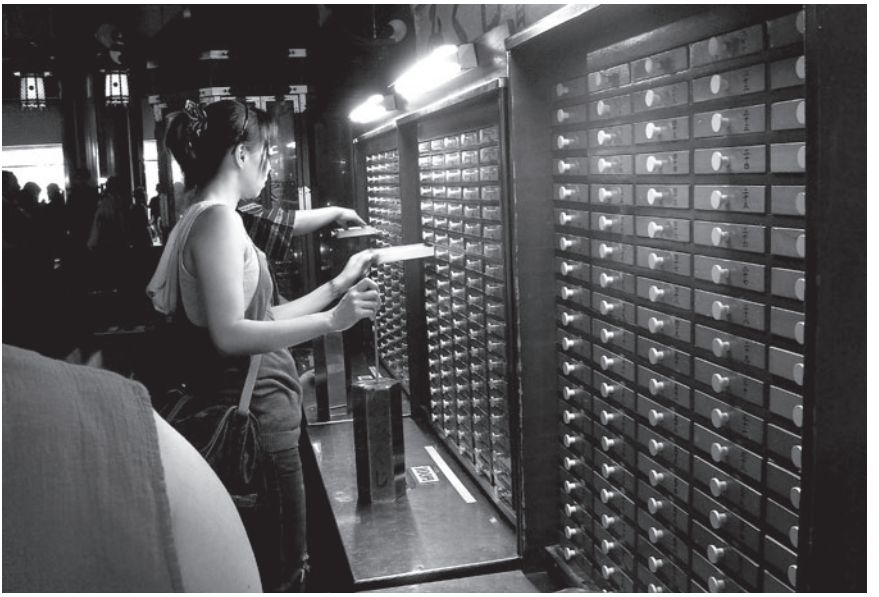


974. Repeated design alongside the water and repeated rectangles enclosing trees. Beijing Zoo, Beijing, China. H.S.

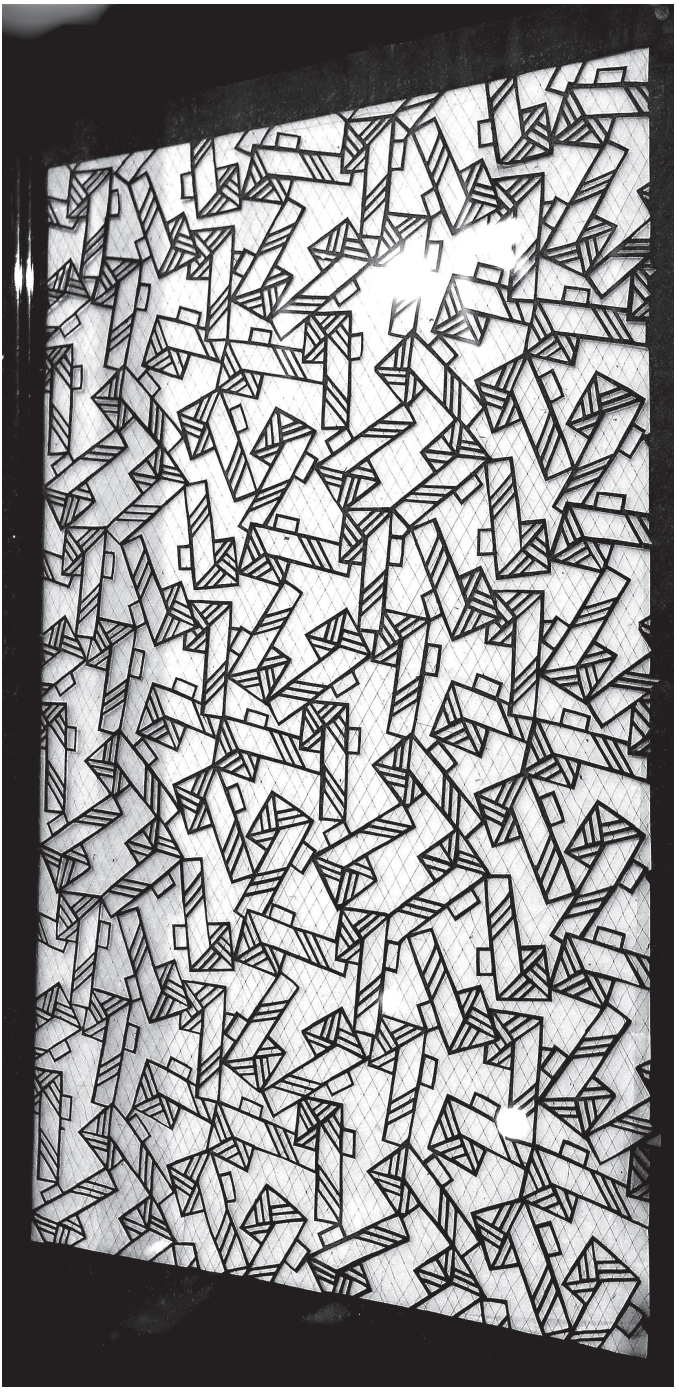
975.
Repeated street signs and barriers. Tokyo, Japan. E.T.



976. Dome with repeated design. Tokyo, Japan. E.T.



977. Identical drawers in a temple. Tokyo, Japan. E.T.



978. Repeated design on a stencil. Japan. Museum of Anthropology, Vancouver, British Columbia.



979-980. Identical lanterns on a float. Gion Festival. Kyoto, Japan. E.T.

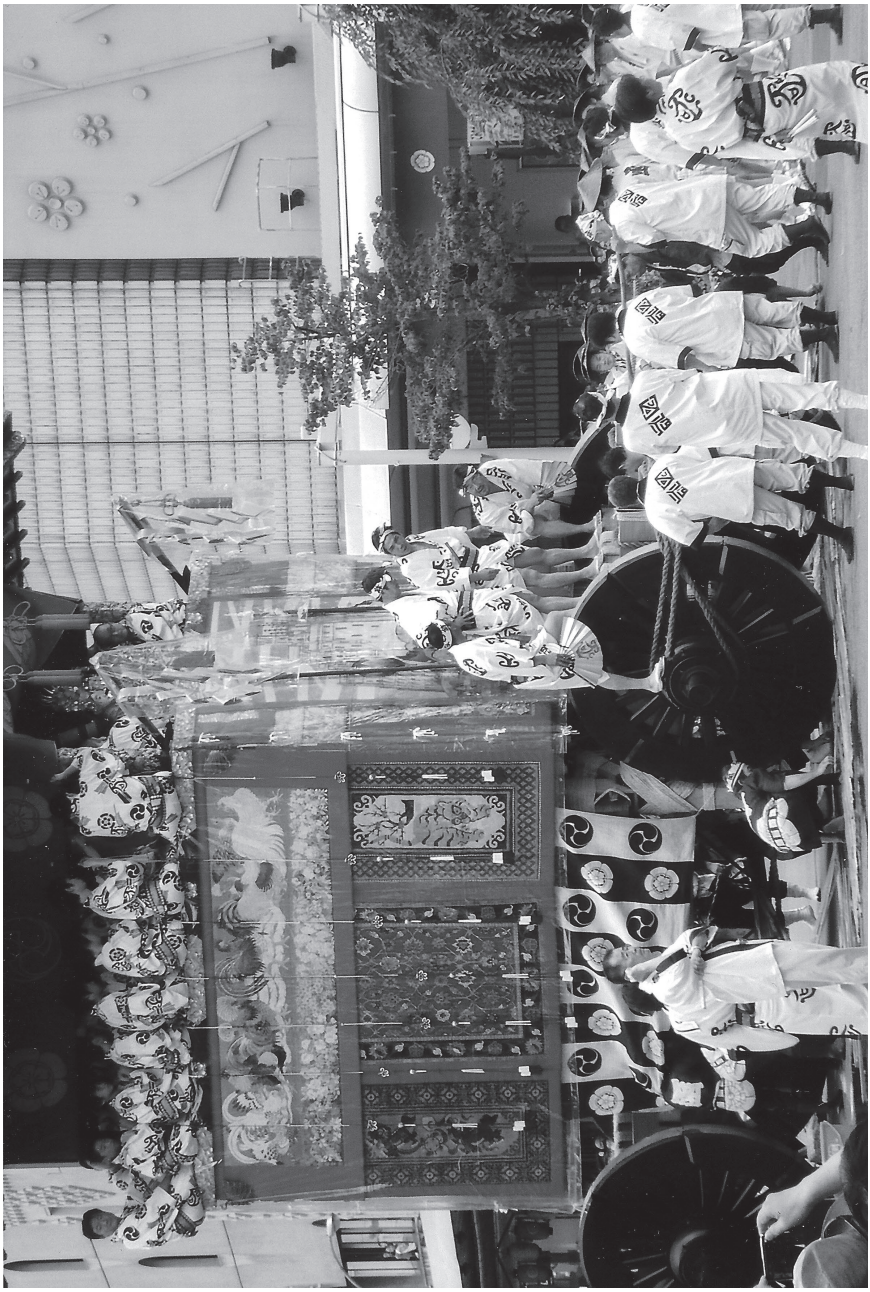




981-985.
Identical clothing worn by various groups at the Gion Festival. Kyoto, Japan. E.T.



982.



983.



984.



985.



986. (left)
Two young girls dressed in identical outfits. Japan. E.T.



987. Korean performers in identical clothing all balancing plates at a shopping mall. Bangkok, Thailand. H.S.



988. Repeated features on a dragon on the façade of a business. Osaka, Japan. E.T.



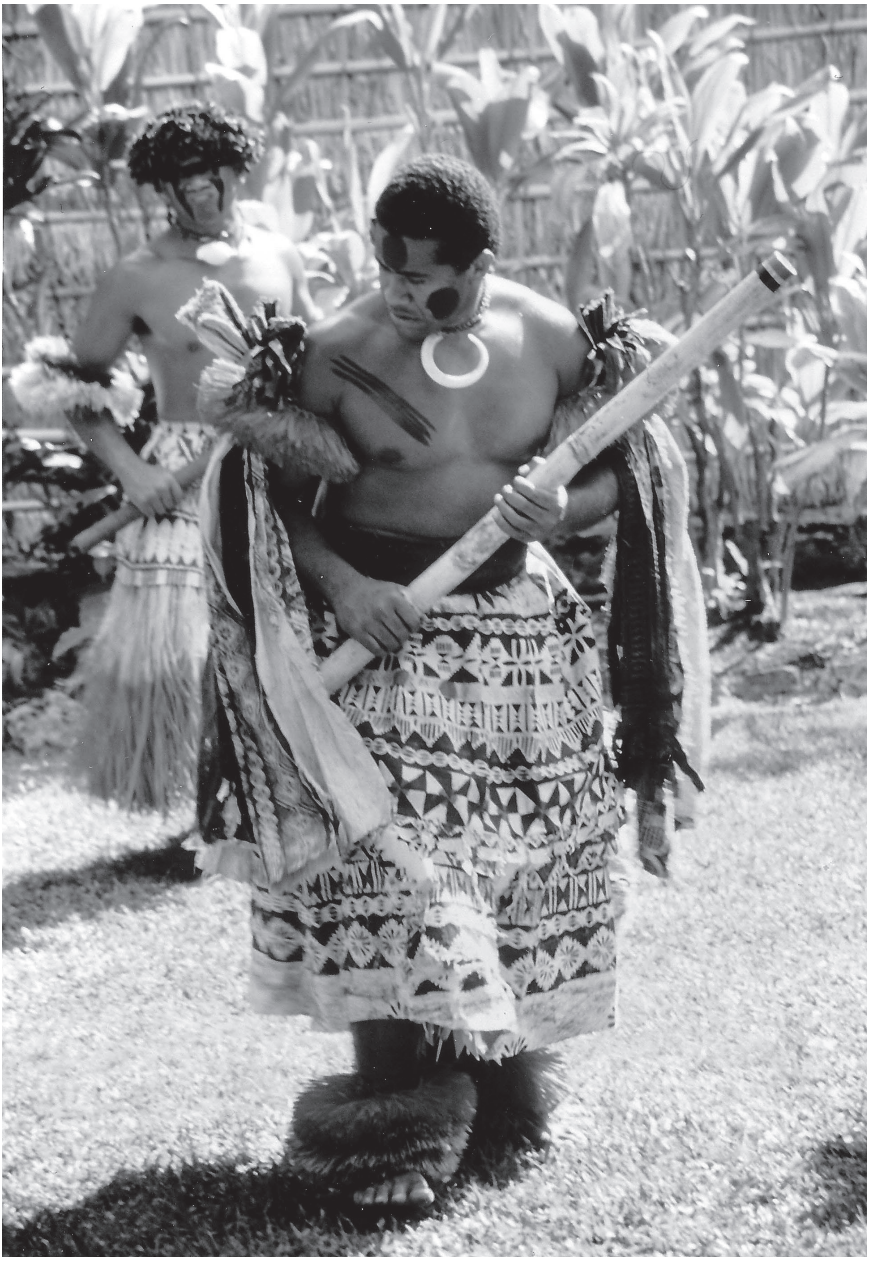
989. Dancers performing identical movements in a Dai (Chinese) folk dance. Charlottetown, PEI.

990. Japanese tourists in identical clothing using identical gestures. Beijing, China. H.S.

3.8. Oceania



991. Wearing a headband and carrying a bag decorated by parallel rows of dog teeth. The teeth have been selected to be the same size. Kilenge-Lolo District, West New Britain, Papua New Guinea. M.Z.



992. Repeated designs on skirts. Notice the symmetrical ankle and arm decorations, the circular face and neck designs on the dancer in front, and the symmetrical face design on the dancer in back. Polynesian Cultural Center, Oahu, Hawaii. H.S.

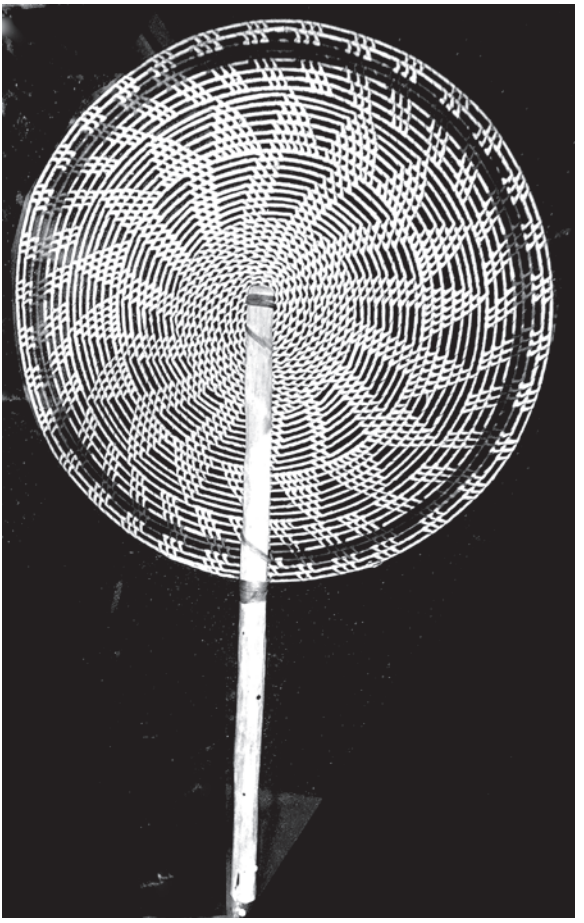
993-994.
Repeated designs on a fly switch. 18th century. Austral Island, French Polynesia. The Louvre.

995. Repeated designs on containers. Solomon Islands. Museum of Anthropology, Vancouver, British Columbia.



996. Repeated designs on fabric. Tapa cloth, Fiji. Museum of Anthropology, Vancouver, British Columbia.

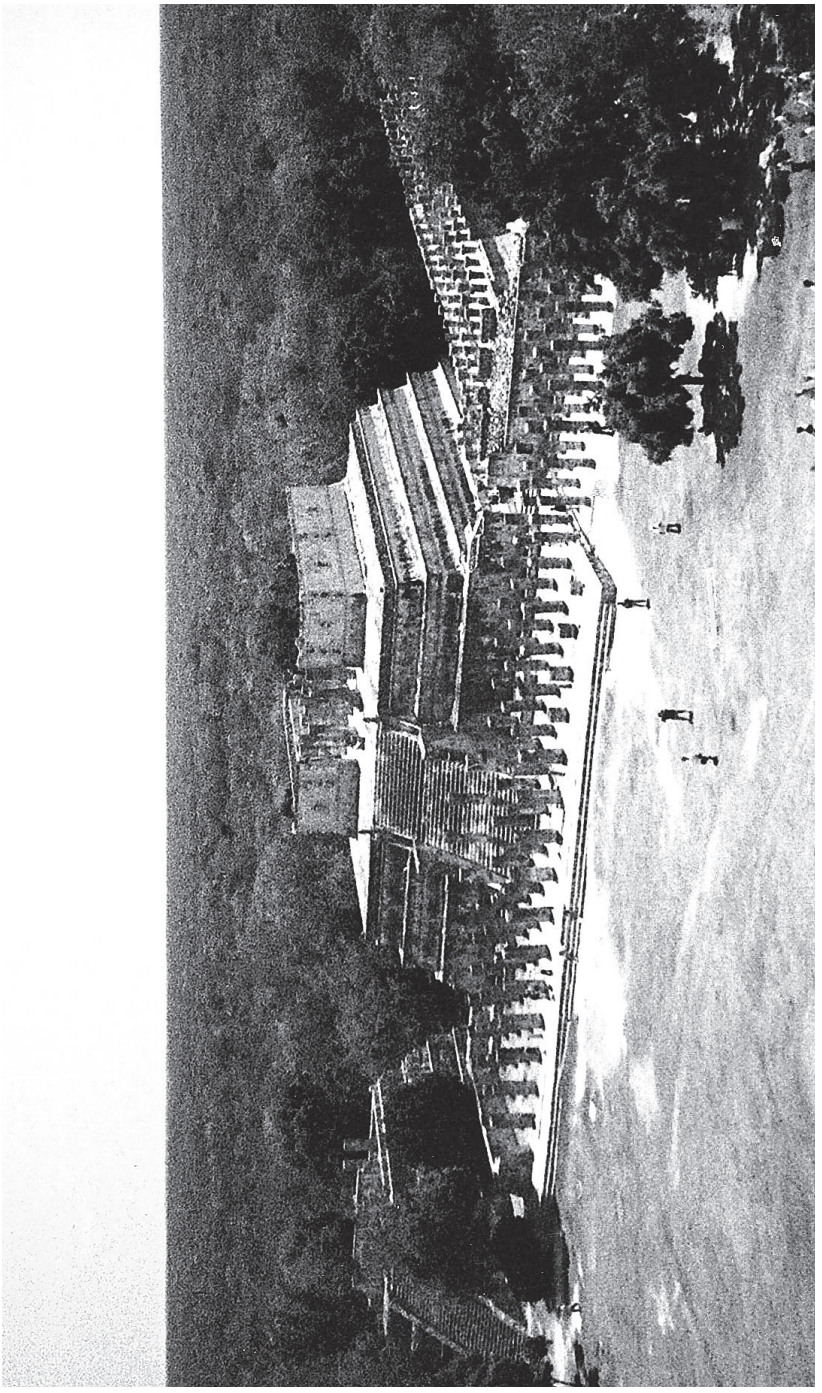




997.
Repeated designs on a club. Fiji. Museum of Anthropology, Vancouver, British Columbia.

998.
Repeated design on a fan. Samoa. Museum of Anthropology, Vancouver, British Columbia.

3.9. The Americas



999-1000. Repeated columns. Temple of the Warriors. Chichen Itza, Mexico. U.K.



1000.

1001. (left) Repeated features. Notice the use of symmetry. 1000-1400 AD. Caldas, Quimbaya. Gardiner Museum, Toronto.

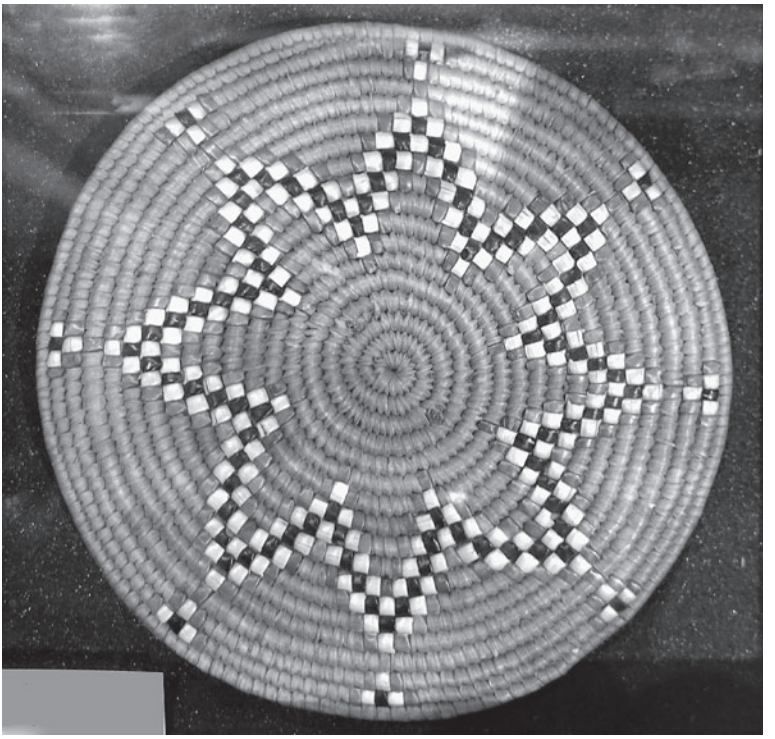
1002. (right) Repeated designs. 1200-1400 AD. Costa Rica. Gardiner Museum, Toronto.



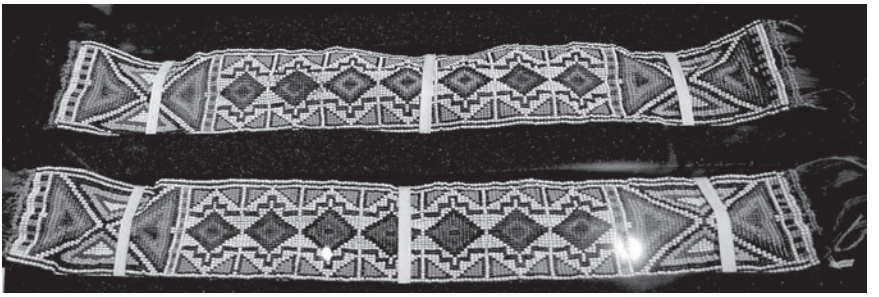
1003. Repeated design on an Inuit visor. The British Museum.



1004. Repeated design. Museum of Anthropology. Vancouver, British Columbia.



1005. Repeated woven design. Coast Salish? Museum of Anthropology, Vancouver, British Columbia.



1006. Repeated designs on garters. Sioux? Museum of Anthropology, Vancouver, British Columbia.

1007-1008.
Repeated features on a jingle dress and leg wear. Notice the symmetry of the dress, and the central position of a) the feathers and b) the design at the back of the head. Native Powwow, Panmure Island, PEI.



1009-1010.
Repeated features at the Tower Theater.
Los Angeles, California.



1010.

1011.
Repeated heads of bears. Mulholland Dam, Hollywood Reservoir, Los Angeles, California.

1012. Repeated US flags flying at half mast. Detroit, Michigan.



1013. Repeated features. Dalvay-by-the-Sea Hotel, PEI.



1014. Repeated designs on Beaconsfield Historic House. Notice the circular structure in the garden. Charlottetown, PEI.

1015-1018. Repeated features on the Anglican Church. Alert Bay, Vancouver Island, British Columbia.



1017-1018.





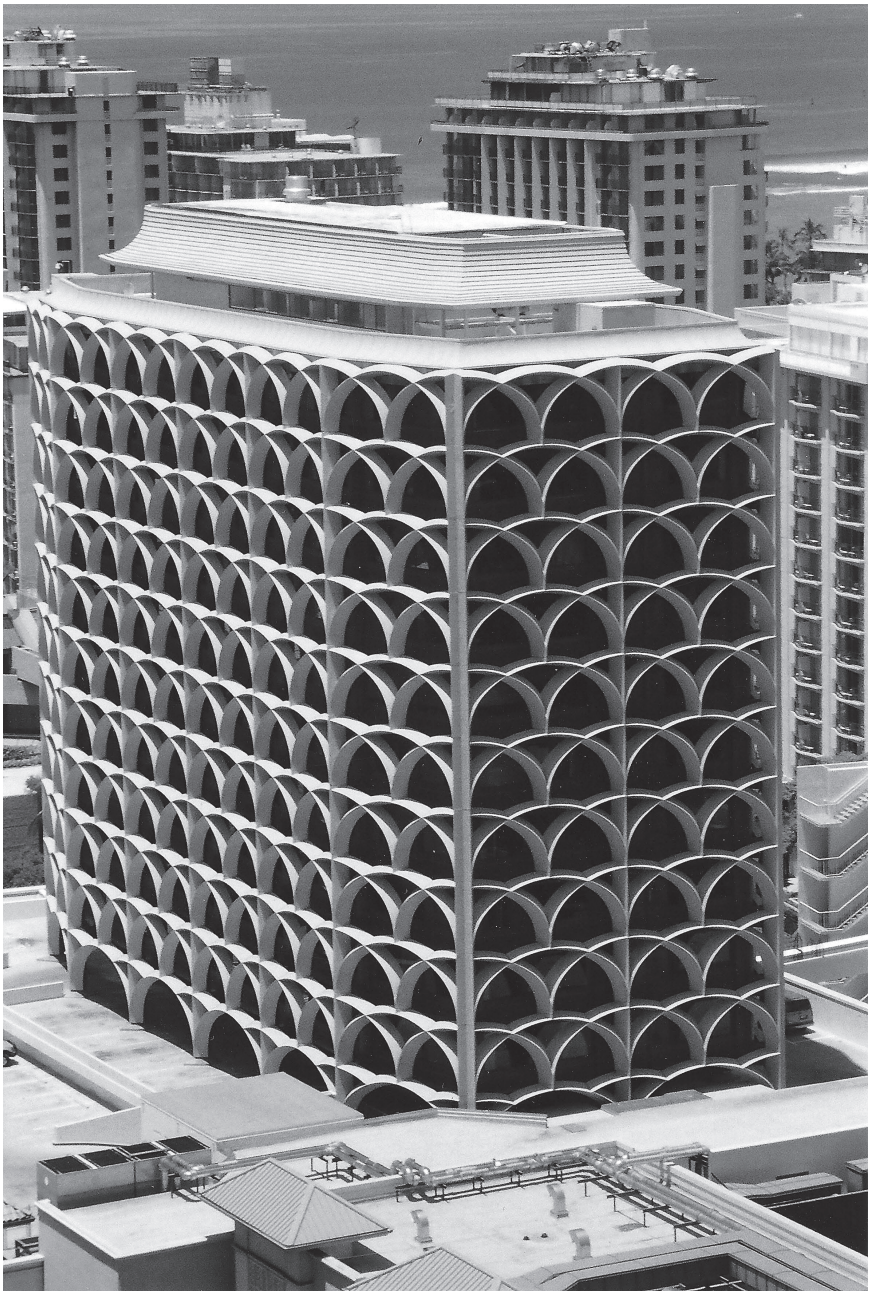
1019. Repeated windows and flower boxes on a home. Charlottetown, PEI.



1020. Repetition of features on a building. Sino United Publishing Ltd. Vancouver, British Columbia.



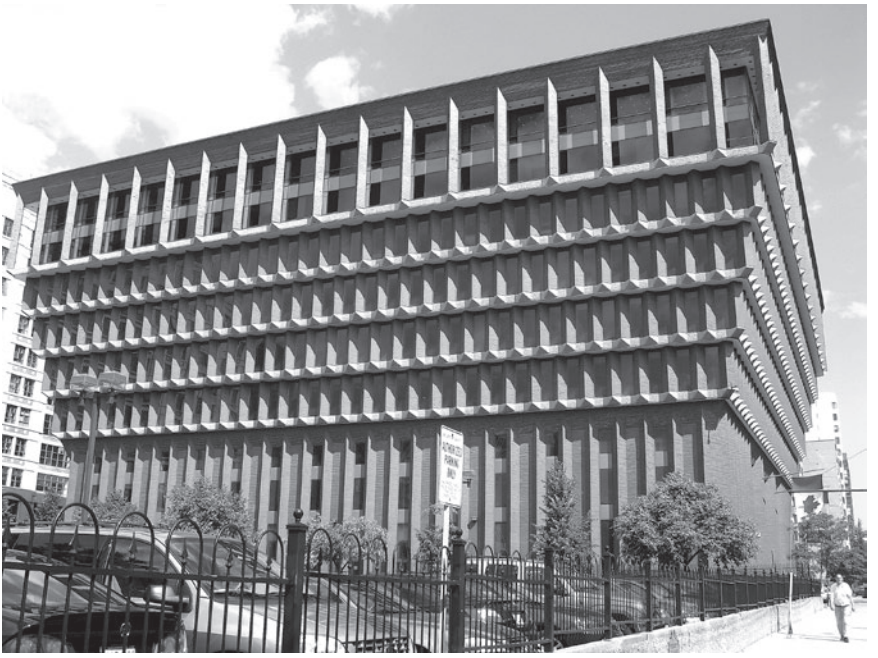
1021. Repeated features on a circular building. Capitol Records, Los Angeles.



1022. Repeated design. Bank of Hawaii Building. Waikiki, Hawaii. H.S.



1023-1024.
Repeated features.
Sears Building. Toronto, Ontario.

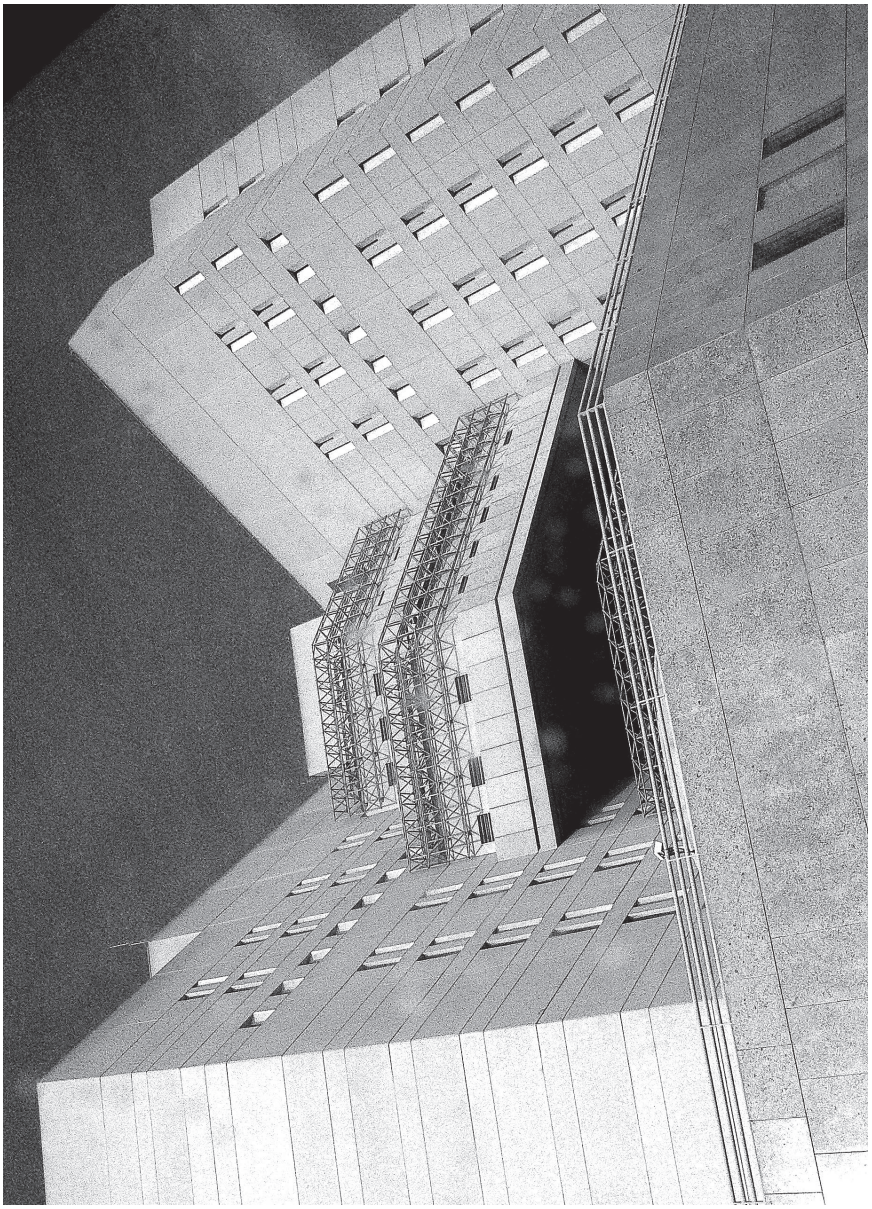




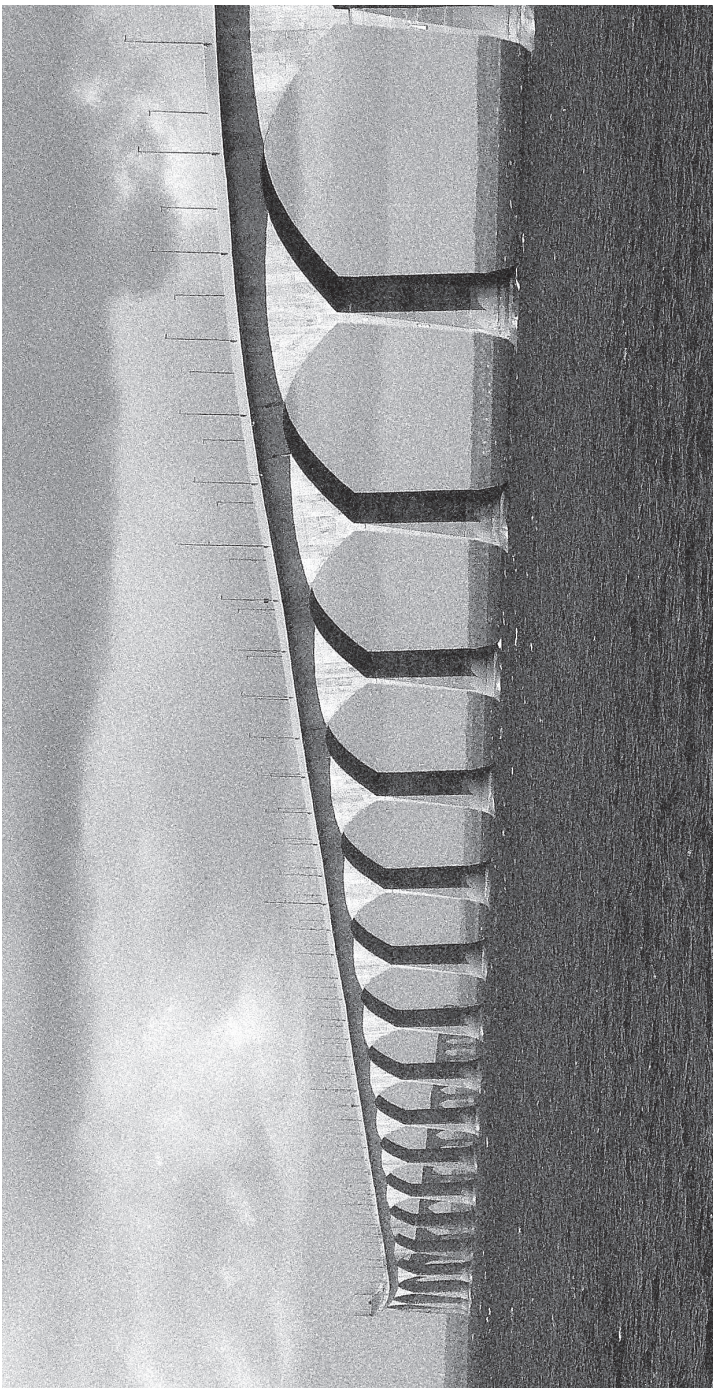
1025. Repeated structures. General Motors Renaissance Center. Detroit, Michigan.



1026-1027. Repeated features on the Metropolitan Detention Center. Los Angeles, California.



1027.



1028. Repeated supports, or piers. Confederation Bridge. PEI.

1029. Repeated designs at Canada Place. Vancouver, British Columbia.



1030. Repeated arches and columns at a strip mall. Notice the use of equidistant placement. Charlottetown, PEI.



1031. Repeated columns. Charlottetown, PEI.

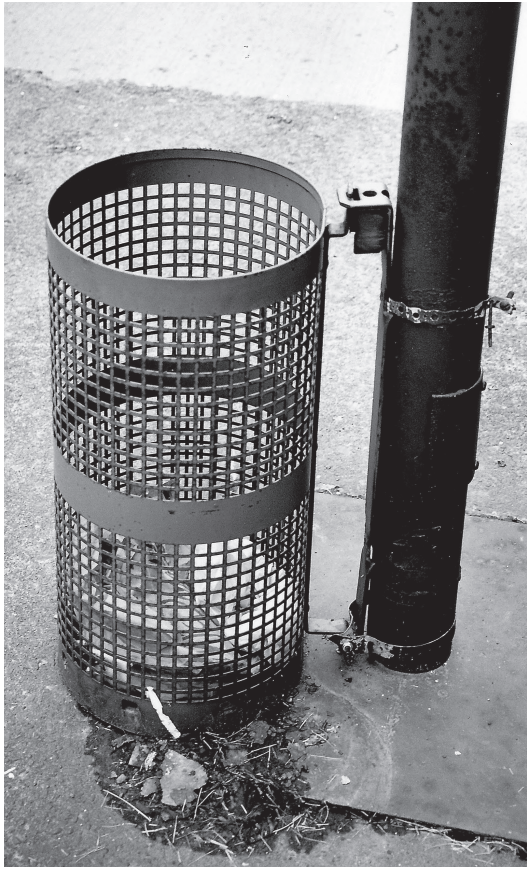


1032. Repeated structure of lobster traps and "shacks" for fishing equipment. North shore, PEI.



1033. A row of identical plants, hostas, on each side of the sidewalk leading to the entrance of a home. Charlottetown, PEI.

1034.
Identical beach chairs and umbrellas. Daytona Beach, Florida.



1035. (left)
Repeated rectangular design of a circular wastebasket on a city street. Notice that the solid areas provide horizontal lines (bands). Charlottetown, PEI.

1036. (below)
Repeated design on a tree guard. Notice the use of circles and equidistant placement in the design. Charlottetown, PEI.





1037.
Repeated rectangular columns alongside a street.
Wilshire Courtyard, Los Angeles, California.

1038.
Repeated designs of lions at the front of a home. Los Angeles, California.



1039. Repeated designs on rectangular pedestals. Notice that the upper edges of the designs form horizontal lines. Union Station, Los Angeles, California.



1040. Identical circular pots. Union Station, Los Angeles, California.



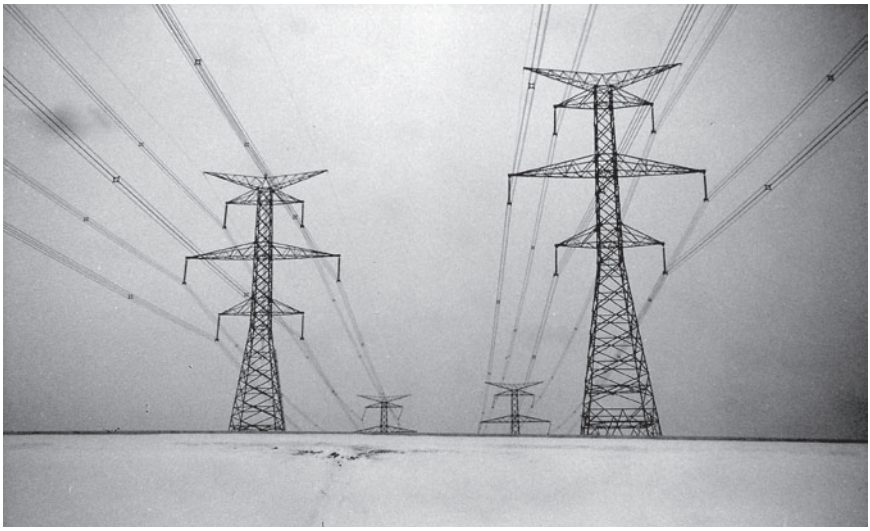
1041. Repeated design. Chicago Public Library. Chicago, Illinois.



1042. Repeated identical lights and windows at a wine store. Halifax, Nova Scotia.



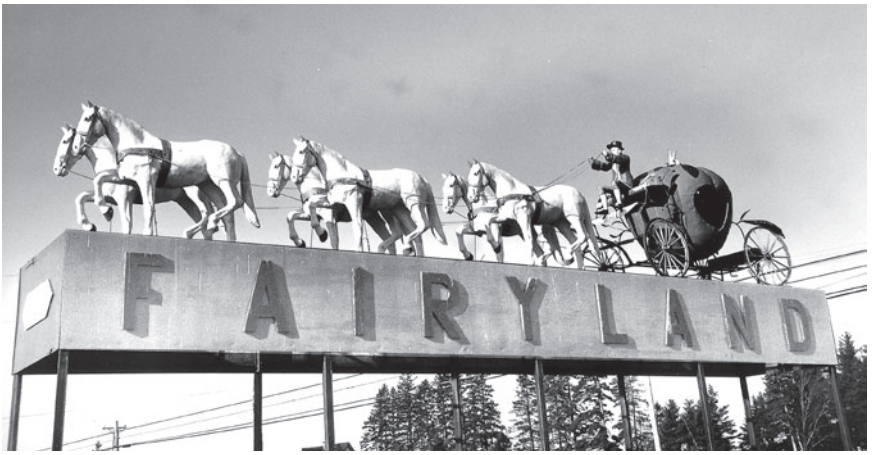
1043. Repeated decorations and outfits in a store window. Vancouver, British Columbia.



1044. Identical electricity towers. Greater Toronto area. Ontario.



1045. Repeated oil tanks. Prince Edward Island.



1046. Identical horses on a sign at the entrance to a children's amusement park. PEI.



1047. Repeated circular lamps. The horizontal lines on the lamps are equidistant from each other. Montreal, Quebec.



1048. Multiple alternating copies of Santa Claus and a smiling snowman for sale as Christmas decorations at a department store. Charlottetown, PEI.



1049. Sign with repetition at the fairgrounds. Charlottetown, PEI.



1050. (left) Repeated circular lamps, columns, and additional rectangles placed equidistant. Vancouver, British Columbia.

1051. (right) Identical trellises with repeated designs positioned over the sidewalk from a house. O'Leary, PEI.

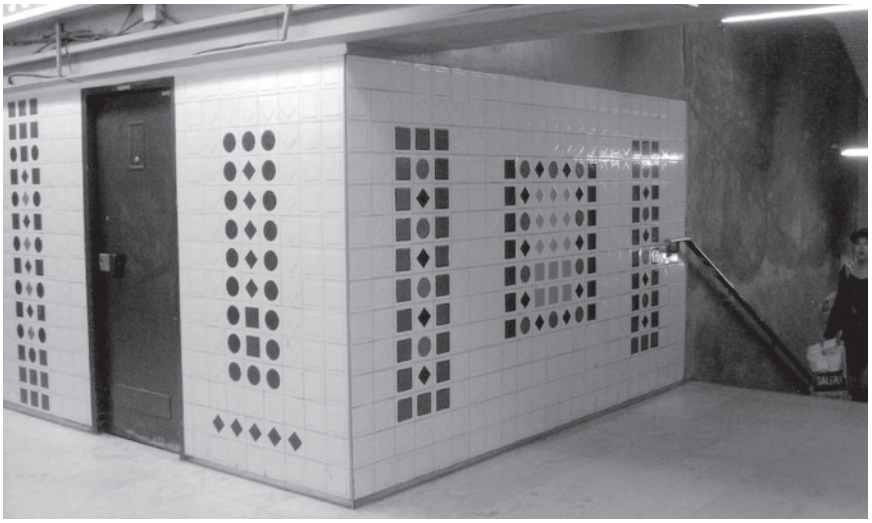


1052. Repeated designs of sea horses, pedestals, columns, and backgrounds. Las Vegas, Nevada.

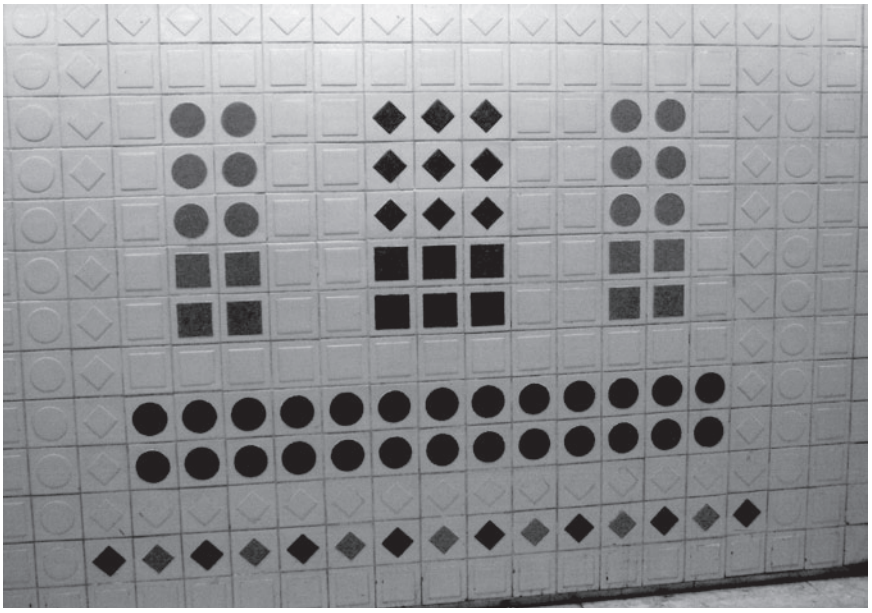


1053-1054. Duplicate beaver floats. Old Home Week parade. Charlottetown, PEI.

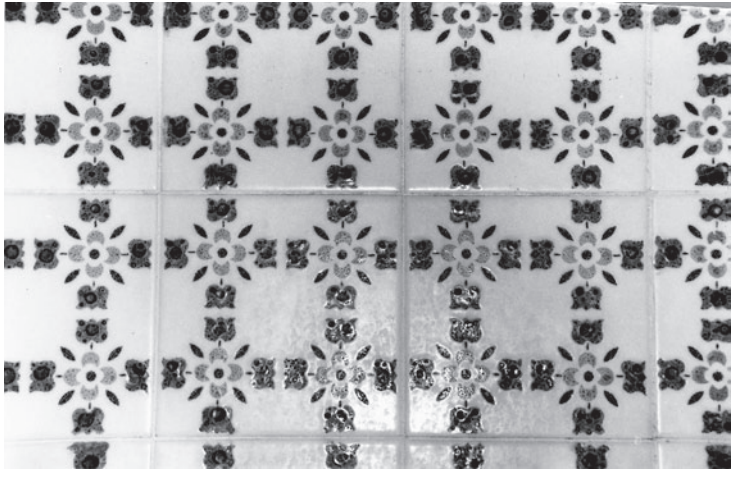




1055-1056. Repeated designs on subway walls. Canada.

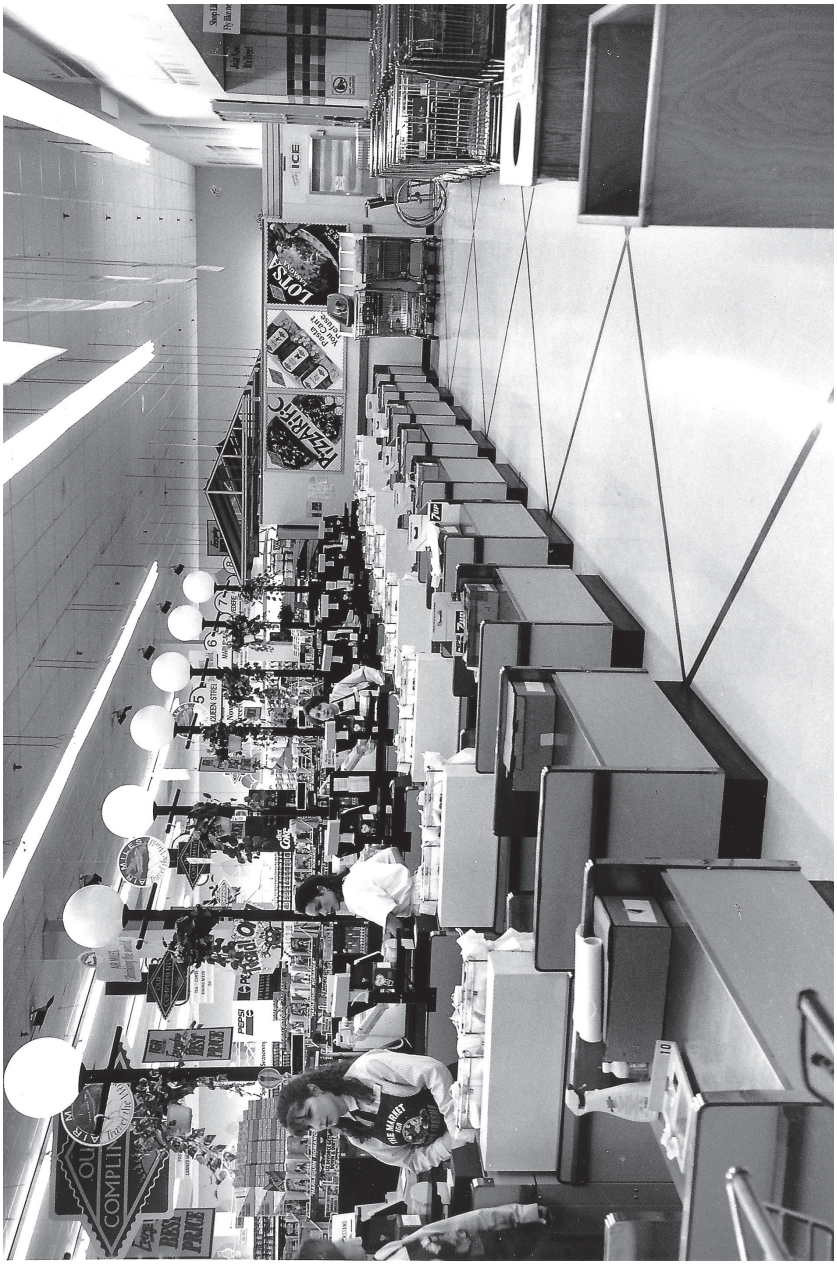






1058. (above)
Repeated designs on wall tiles.
Halifax, Nova Scotia.

1057. (left)
Repeated lights,
beams, and arches.
Union Station,
Los Angeles.



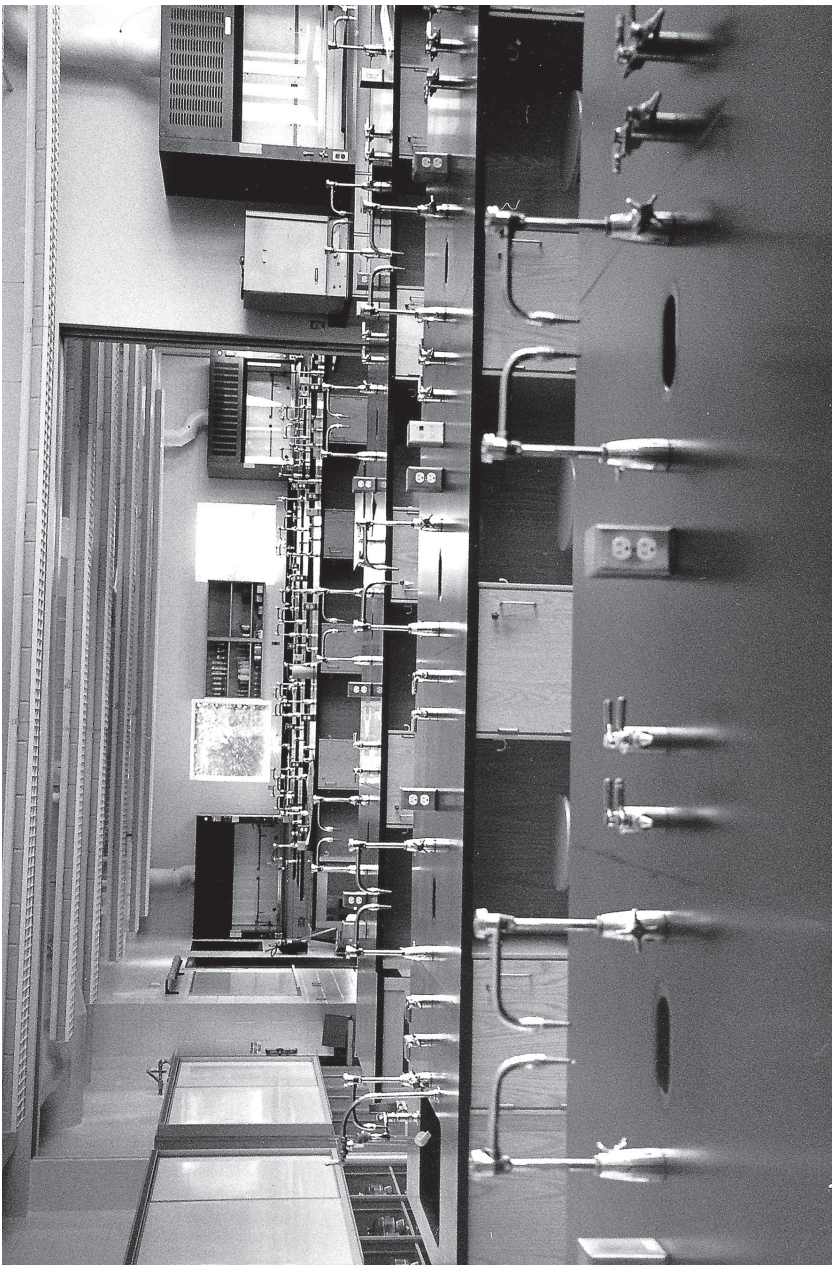
1059. Repeated design of checkout counters in a grocery store. Charlottetown, PEI.



1060. Repeated design on a counter for different colored lipsticks. Cosmetics section, Eaton's store, Eaton Centre, Toronto.



1061. Repeated work stations in a university computer laboratory. Charlottetown, PEI.



1062. Repeated work stations in a university chemistry laboratory. Charlottetown, PEI.



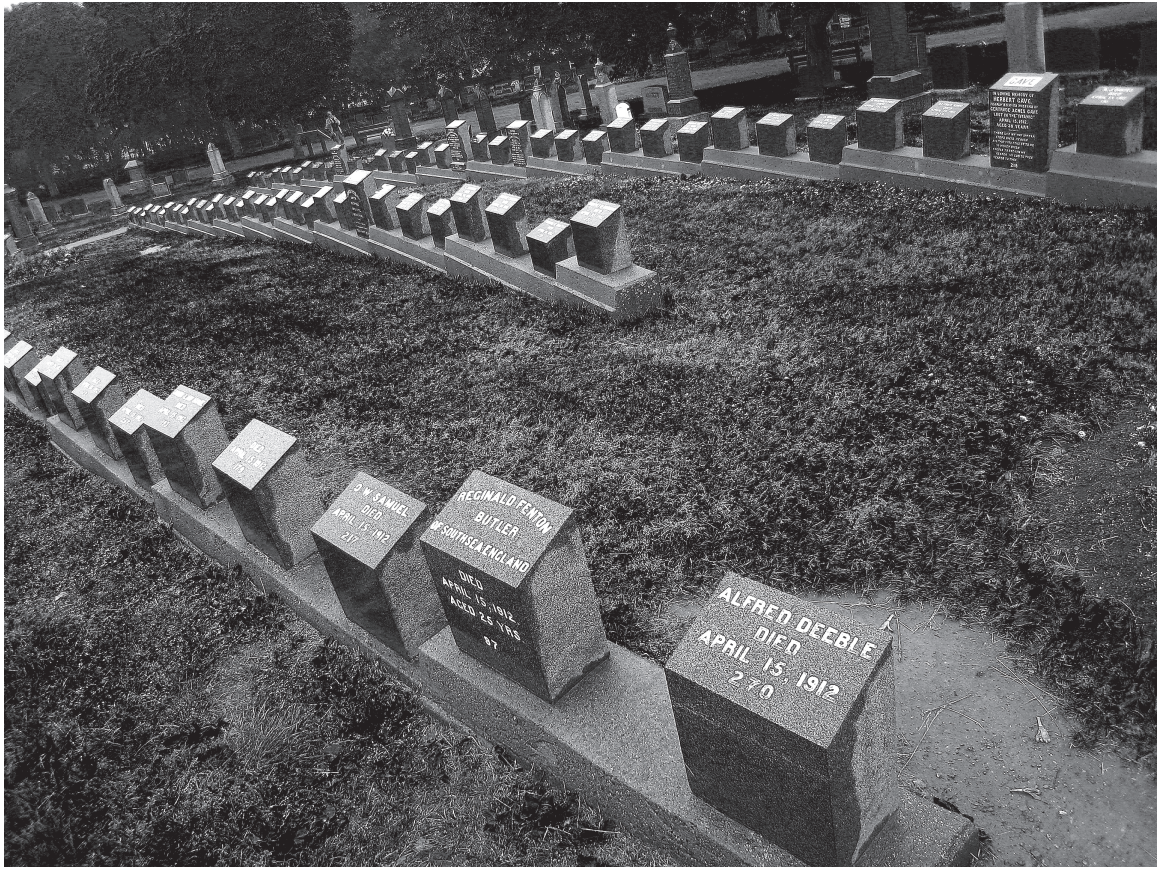
1063. Repeated cubicles in a university language laboratory. Charlottetown, PEI.



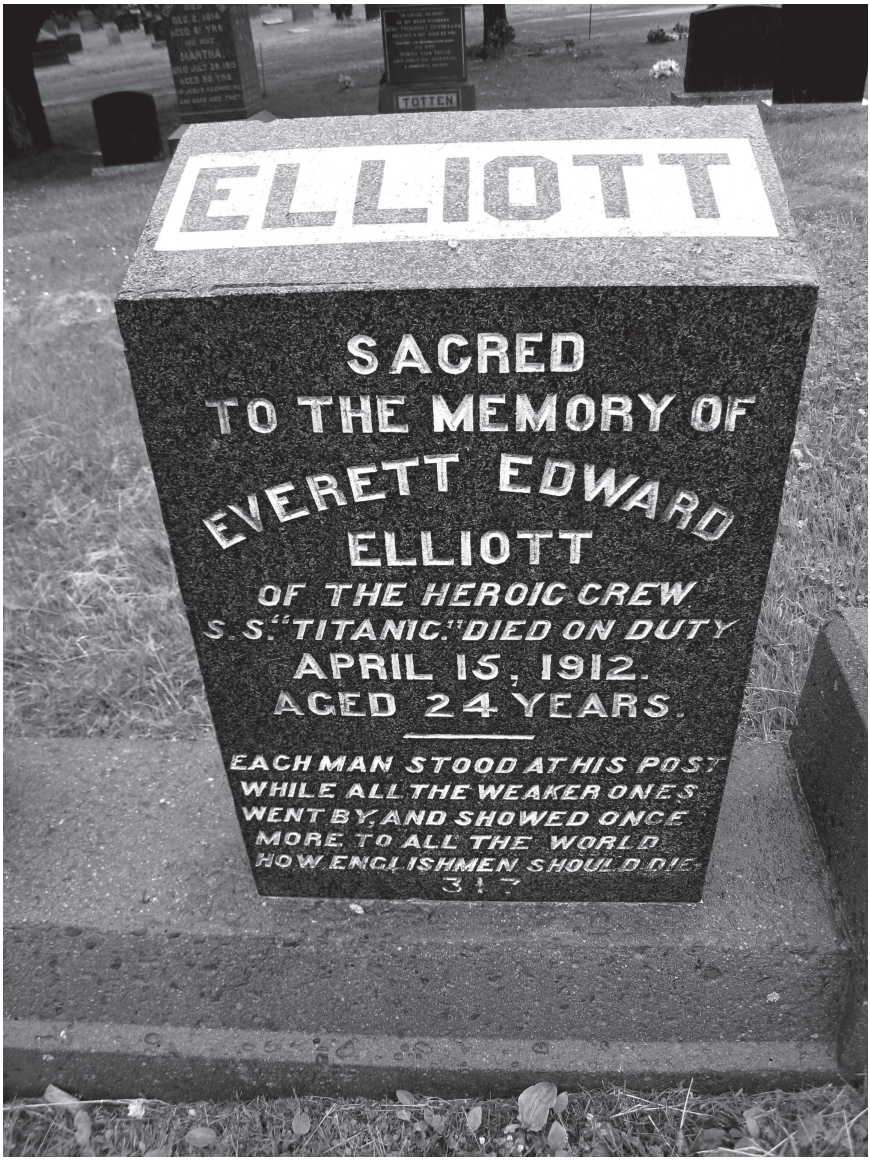
1064. Repeated furnishings in a hotel dining room. Dalvay, PEI.



1065. Repeated gambling stations at a miniature "horse racing track" at the fairgrounds. Charlottetown, PEI.



1066-1067. Repeated design of headstones at a cemetery for RMS Titanic victims. Halifax, Nova Scotia.



1067. The message at the bottom of this tombstone states, "Each man stood at his post while all the weaker ones went by, and showed once more to all the world how Englishmen should die."



1068-1069. Identical shape of multiple headstones. Notice the equidistant placement. Graves of World War II soldiers. El Alamein Cemetery, Egypt. M.E.



1070.
Repeated placement and design of chairs and towels at a pool on a cruise ship.
E.T.



1071-1072. Vehicles decorated with multiple maple leaves or pirate flags. Old Home Week parade. Charlottetown, PEI.









1073-1075. Repetitive designs on hubcaps. Charlottetown, PEI.

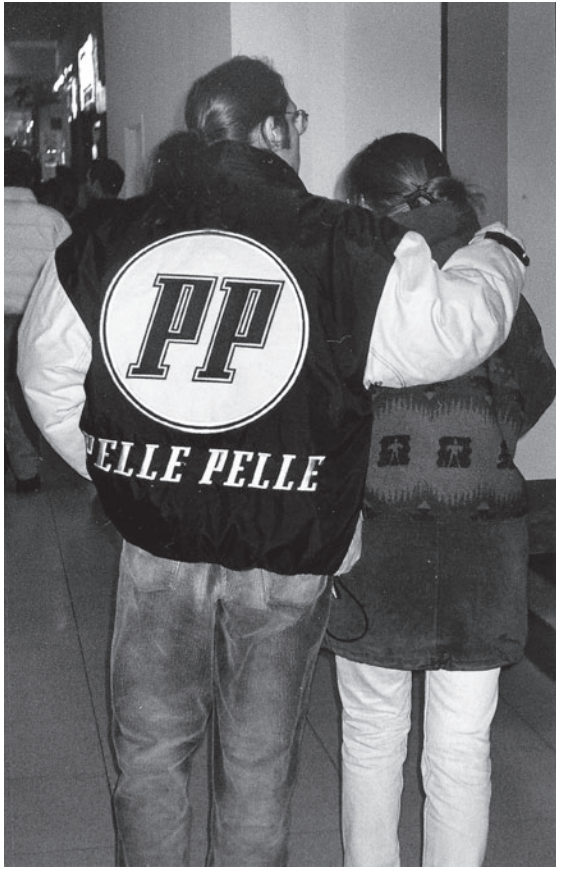


1076-1077. Repeated design on a person's head. Charlottetown, PEI.





1078. Separate areas of repetition on an outfit. Charlottetown, PEI.



1079. (left) Repeated letters and words on a jacket. Notice the circle. Toronto, Ontario.



1080. (right) Separate areas of repetition on a blanket worn on a ferry boat to Prince Edward Island.

1081. Identical clothing worn by Amish women. Charlottetown, PEI.



1082. Identical leg and arm movements by Royal Canadian Mounted Police in identical uniforms. Notice the horizontal brims and bands on their hats and the vertical stripes on their legs. Old Home Week parade, Charlottetown, PEI.



1083.
Identical clothing and hats worn by Shriners.
Old Home Week parade.
Charlottetown, PEI.



1084. Band in identical clothing. Old Home Week parade, Charlottetown, PEI.



1085-1086. Bagpipe players in identical clothing. Old Home Week parade. Charlottetown, PEI.





1087. Circus elephants wearing identical decorations are trained to lie down at the same time. Notice the circular rink with repetitive designs. PEI.



1088. Rectangular flag of the United States with repeated stars and horizontal stripes located equidistant from each other. Hawaii.



1089.
Saturn 1B Rocket with repeated tanks, fins, and exhaust nozzles. Kennedy Space Center, Cape Canaveral, Florida.



1090. Repeated design on a woven bag from the Andes.



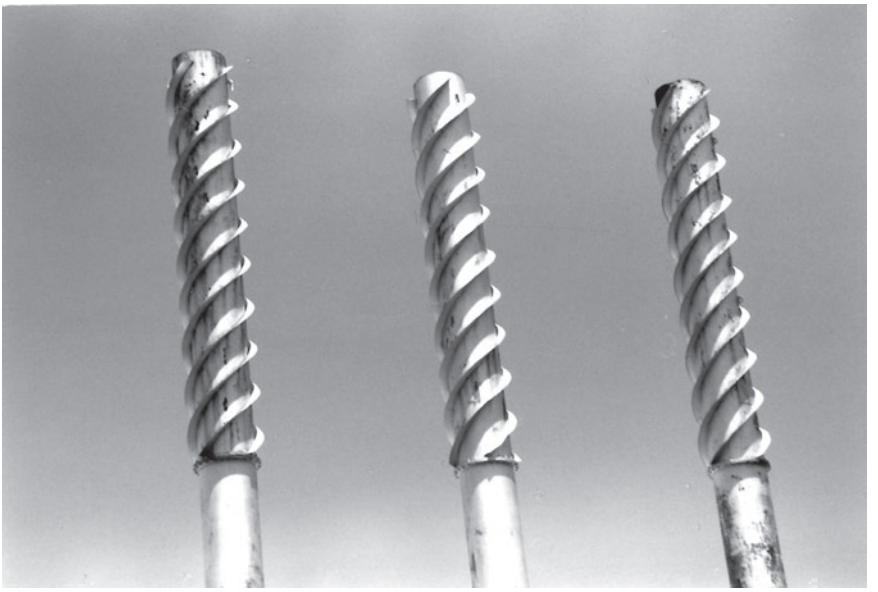
1091. Repeated designs on gourds. Amazon River. Museum of Anthropology, Vancouver, British Columbia.



1092. (left) Repeated design on doors. Santo Domingo, Dominican Republic.



1093. (right) Repeated political stickers on poles. Santo Domingo, Dominican Republic.



1094. Identical smokestacks with a repeated design. Santo Domingo, Dominican Republic.



1095. Repeated designs on a fountain. Santo Domingo, Dominican Republic.



1096. Repeated iron work. Santo Domingo, Dominican Republic.



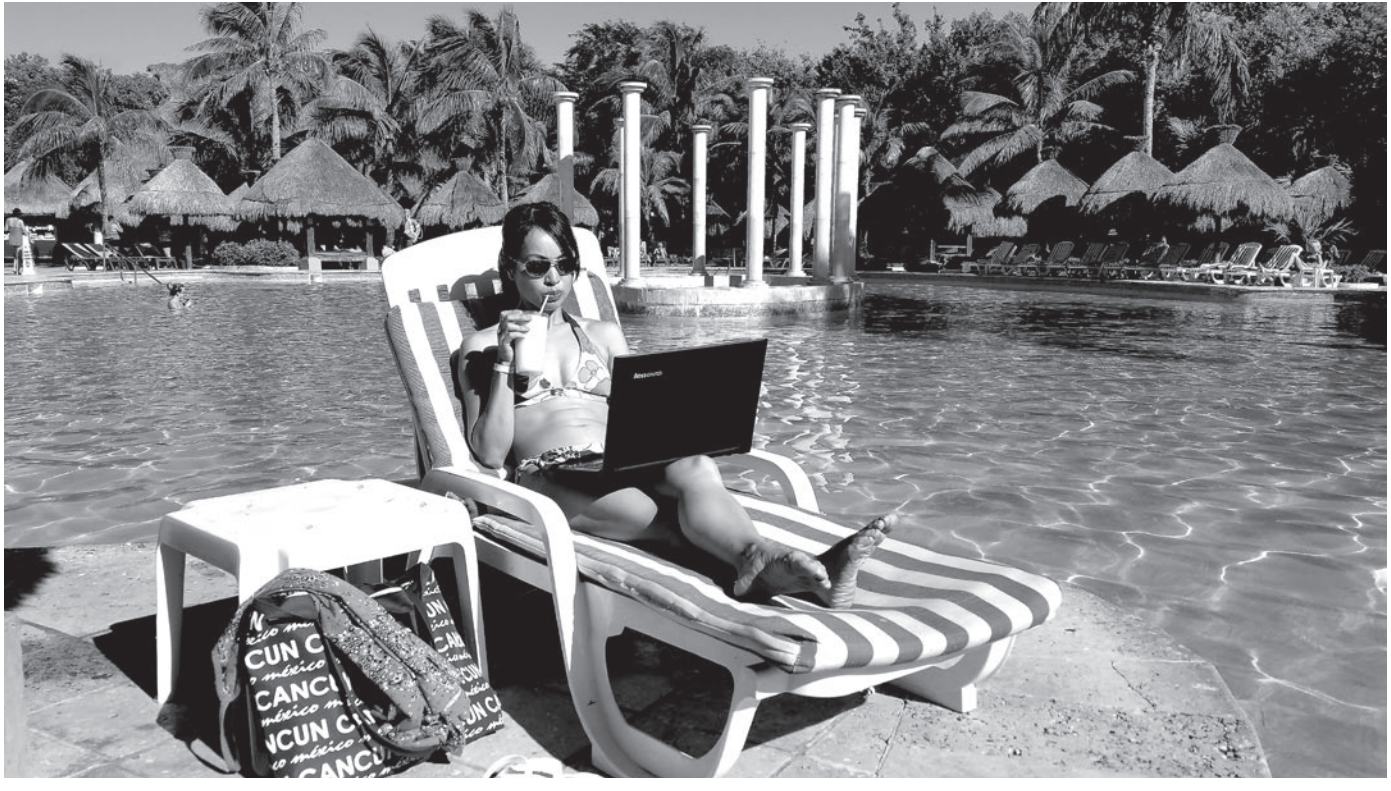
1097. Repeated design in a metal bench in a public park. Santo Domingo, Dominican Republic.



1098. Repeated designs on clothing. Mexico. B.C.



1099-1100. Musicians in identical clothing playing the same piece of music. Vancouver, British Columbia.



1101. Repeated columns, thatched roofs, and chairs at a resort. Mexico. E.T.



1102. Repeating the behavior of another person. Tourists in Playa del Carmen, Mexico. E.T.

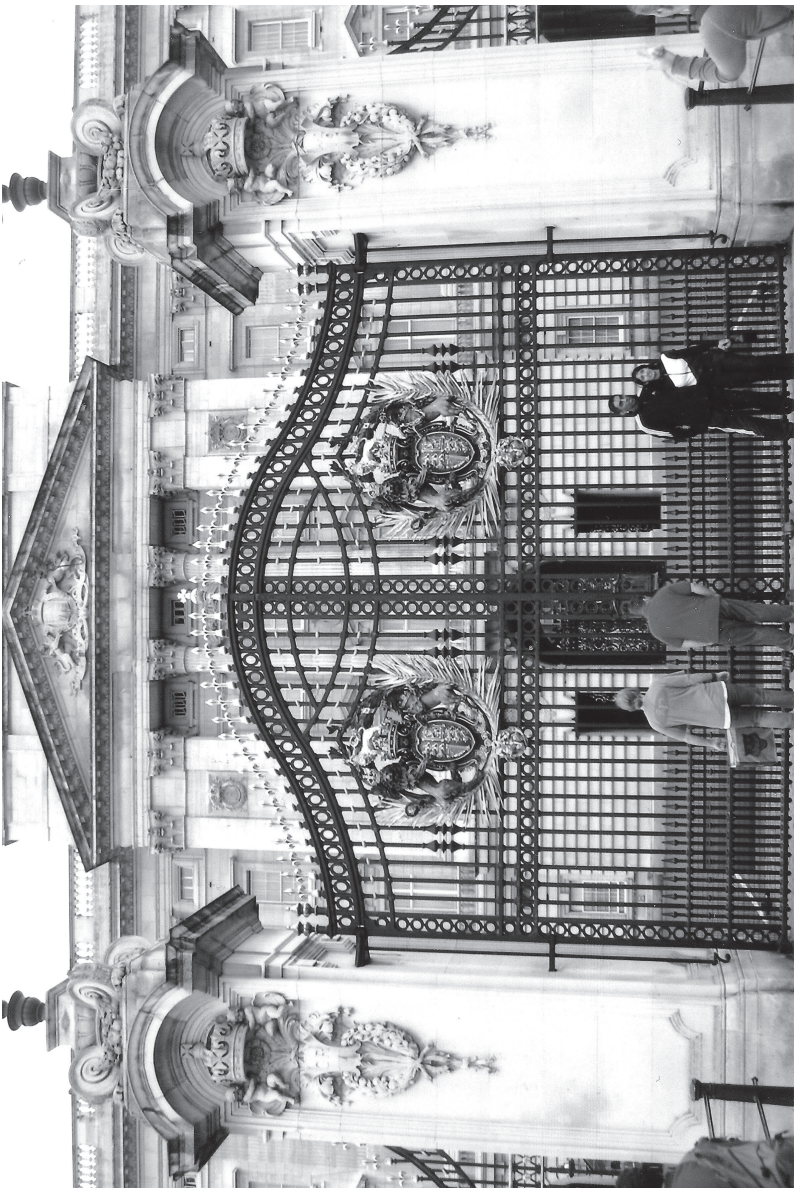
3.10. Repetition applied symmetrically



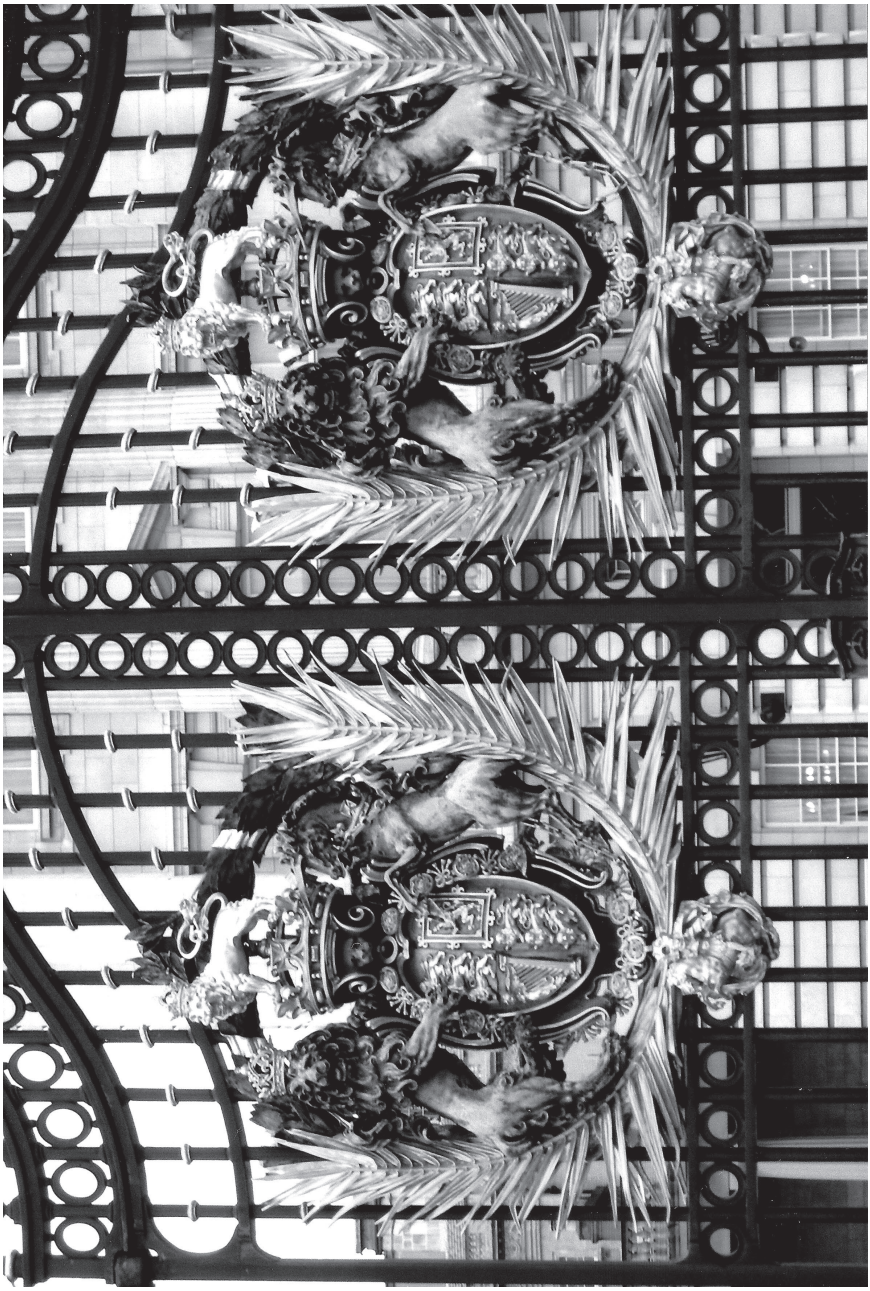
1103. Duplicate signs of a worker shoveling that are placed on both sides of the back of a public works truck to present a symmetrical appearance. Notice the symmetrical arrangement of the diagonal lines. Charlottetown, PEI.



1104. Identical signs placed on both sides of a doorway to present a symmetrical appearance on a shop that sells music recordings. Charlottetown, PEI.



1105-1106. Duplicate designs placed on both sides of a gate to present a symmetrical appearance. Notice the use of circles and vertical lines. Buckingham Palace, London, England.



1106.